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**The People and their Forest:
An Environmental History of the relationship between
the Cube People and the iNkandla Forest,
KwaZulu-Natal (1820-2000)**

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A handwritten signature in black ink, consisting of several vertical strokes followed by a long horizontal stroke that extends to the right.

**Submitted in partial fulfillment of the academic requirements for the degree of
Master of Environment and Development at the Centre for Environment and
Development, Faculty of Science and Agriculture, University of Natal,
Pietermaritzburg**



This photograph was taken on 30 September 1999, the day of a cultural cleansing ceremony conducted by the present *iNkosi* Shezi of the Cube chiefdom in iNkandla district, for the late *iNkosi* uSigananda kaZokufa who died in jail in July 1906, after the Bhambatha Rebellion. This ceremonial event gave the researcher an opportunity to retrace her roots and rediscover the origins of her family as a Tenza by birth, whose *isithakazelo* or form of polite address is Shezi. In the popular narratives of the Tenza history, the Tenzas of the Ixopo district originated amongst the Cube people (the Shezis) of the iNkandla district. The Tenzas are the descendants of the house of Duluzana kaMvakela, whereas the Shezis are the descendants of the house of Sigananda, kaZokufa, kaMvakela.

Photograph: by Doh Ngcobo

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ABSTRACT

In southern Zululand in the province of KwaZulu-Natal within the iNkandla Magisterial District, a rural area, lies the indigenous iNkandla forest. This is the last remaining rare relict type of indigenous high wet rain forest in Southern Africa. This forest is of great importance not only for its unique biodiversity, its perennial source of water, but also as a resource base for the Cube people. This remote community lives mostly a traditional Zulu lifestyle in an area devoid of basic infrastructure, municipal services or economic activity. The Cube people are reliant on the forest resources for some of their daily basic material needs.

This dissertation is an examination of the relationship between the Cube people and the iNkandla forest over time. The study investigates the ecology and biodiversity of the iNkandla forest. It also describes the Cube people's lifestyle, history and the continuous utilisation of the forest resources. The core focus of the study is that the iNkandla forest is not only an integral part of the Cube people's lives, but also has a rich cultural history.

The research findings show that the daily activities of the Cube are impacting heavily on the forest resources. In order to minimise negative environmental impacts, sustainable utilisation of these resources needs to be established. This can enhance the relationship between the Cube people and the forest. The people's view of the forest and its change with time is investigated. The goods and services this forest provides to meet people's basic material needs portrays the relationship between the people and the forest.

To sustain this relationship a model that illustrates a process that can be established and implemented effectively is recommended. This process will empower the Cube people to make constructive and effective choices and decisions. It will also inform the people of the sustainable ways of utilising the forest resources and enhance their relationship with the natural resources. The aim is to promote future developments that the Cube people are likely to see in future. This will inform their understanding of sustainable utilisation of the forest resources for future generations. Empowered people will recognise social principles for appropriate interactions with nature.

The final part in this study revisits the theory of environmental history. It outlines briefly the manner in which the environmental history theory has been applied. It also explains the reason why the principles of environmental history have been adopted for this study.

LIST OF ABBREVIATIONS

CCA	Community Conservation Areas
KZN	KwaZulu-Natal
Mag.	Magistrate
Min.	Minute
NAD	National Archival Depot
NKA	INkandla District
OIC	Officer-in-charge
Rep	Report

GLOSSARY OF ZULU WORDS

<i>abafokazana</i>	men of no account
<i>amabele</i>	sorghum
<i>amasi</i>	sour milk
<i>iNkosi/amakhosi</i>	chief(s)
<i>induna/izinduna</i>	headman/headmen
<i>iphisi/amaphisi</i>	person(s) who is very fond of hunting
<i>ihlambo</i>	a ceremonial washing of spears that takes place a month after the slaughter of the funeral goat.
<i>ilobolo</i>	cattle/cash conveyed in marriage arrangement from a man's family to a woman's
<i>inqina</i>	hunting party
<i>udibi</i>	a mat-carrier

ORTHOGRAPHY

Modern orthography has been used when the author incorporates the Zulu words into this dissertation. For example, the author used iNkandla, Bhambatha, Thukela. In contrast, colonial officials wrote, Nkandla/Nkandhla, Bambata, Tugela.

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CHAPTER ONE: ENVIRONMENTAL HISTORY, THEORY AND METHODOLOGY

1.1 INTRODUCTION

The main task undertaken in this chapter is to provide a theoretical and methodological approach for understanding the environmental history of the Cube people and their forest from 1820 to 2000. This chapter provides a brief analysis of the important theories and viewpoints that have been put forward in some of the works of environmental historians. It also examines guidelines and theories set out by four environmental historians: Stephen Dovers,¹ Donald Worster,² Madhav Gadgil and Ramachandra Guha.³ These studies have been selected because they provide useful guidelines and a methodology which can be applied to this project and an understanding of how the present landscape and patterns of human activities regarding the iNkandla forest resources have come into being; furthermore these studies helped show how these patterns have impacted (positively and or negatively) on the people's interrelationship with the iNkandla forest. Gadgil and Guha's concept of mode of resource use will be briefly explored to chart the forest resource changes due to human impact.

The purpose of this dissertation is to investigate the relationship between the Cube people and the iNkandla forest in the iNkandla District, a rural area in southern Zululand in the province of KwaZulu-Natal (see Map 1, p. 2). This dissertation aims to explore and contribute to an understanding of the role of the forest and its resources in influencing the lifestyle of the Cube people, and the environmental impact they have had on the forest's natural resource base. This research also examines the patterns of the people's agricultural activities, livestock production and crop cultivation, hunting (for food, recreation and ritual), wood and plant gathering for building material and fuel (fire), and cultural activities (medicinal, handicrafts).

These are the environmental issues this research will investigate to determine whether they have impacted on the ecology of the iNkandla Forest Reserve (NFR). These are the same environmental issues the Cube people and the nature conservation authority of KwaZulu-Natal, *Ezemvelo* KZN Wildlife, in Eshowe face. To strike a sustainable balance between people and their relationship with the forest, recommendations will be provided at the end of this dissertation to establish sustainable conservation of the forest resources for the future.

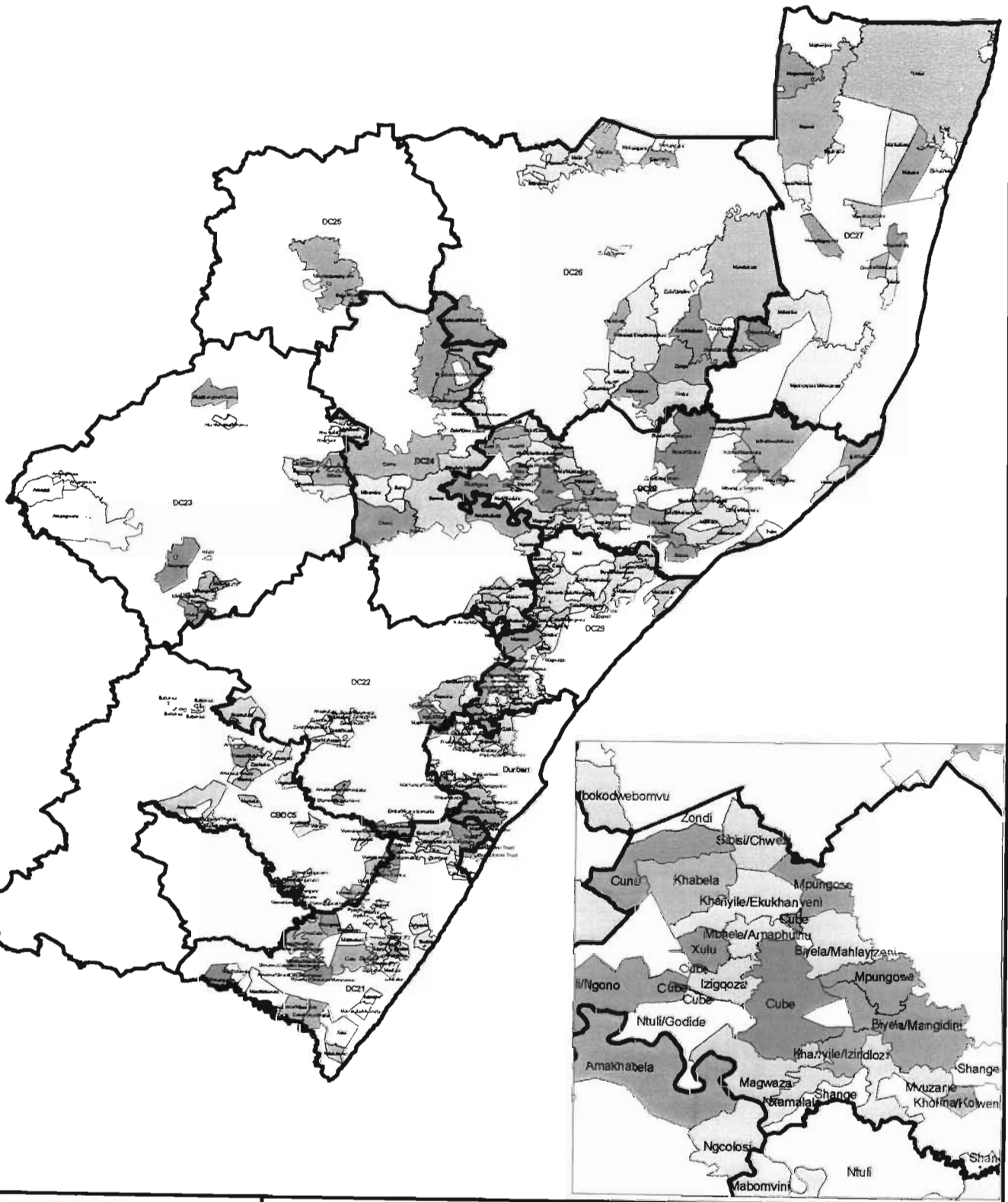
¹ S. Dovers, ' "Sustainability" and "Pragmatic" Environmental History: A note from Australia' *Environmental History Review* (Fall, 1994), Vol. 18 No. 3, p. 21-33.

² D. Worster (ed), *The Ends of Earth: Perspectives on Modern Environmental History* (Cambridge University Press, Cambridge, 1988).

³ M. Gadgil and R. Guha, *This Fissured Land: An Ecological History of India* (Oxford University Press, New Delhi, 1992).

Map 1: showing the Cube Chiefdom in KwaZulu-Natal

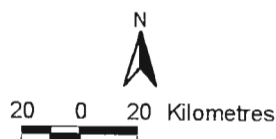
CUBE CHIEFDOM IN KWAZULU-NATAL



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1.2 DEFINITION OF ENVIRONMENTAL HISTORY

Among historians worldwide, an interest in environmental history as a discipline has been growing steadily since the 1970s.⁴ Environmental history is a relatively young discipline in the academic world, and it has emerged largely because of a growing concern for the increasingly evident signs of a global environmental crisis. It deals with the mutual interactions between human beings and nature over time. This discipline attempts to argue a case in which the environment, cultures and economies of people interact in order to influence and shape one another. Environmental history is multidisciplinary. It combines subjects from both the natural sciences and humanities. Human activities have environmental consequences and changes in natural systems, whether they are induced by humans or nature itself, affect human beings.⁵

Worster defines environmental history as a discipline that is about the role of environmental change and the place of human life over time.⁶ What Worster implies is that environmental history examines the interactions between human beings and the natural world. He argues that ‘it is time we reject the conventional assumption that human experience has been exempt from natural constraints, that people are a separate and “supernatural” species and that the ecological consequences of past deeds can be ignored’.⁷

1.3 ANALYSIS OF ENVIRONMENTAL HISTORY THEORY

It is considered appropriate to undertake an examination and analysis of the theory, techniques and methodology underlying this discipline in order to provide an explanation of how these methods have been applied to this study.⁸ A core focus is to provide a brief analysis of the important theories and viewpoints that have been put forward in some of the works of environmental historians. Therefore, the guidelines and theories set out by Dovers, Worster, Gadgil and Guha are examined. To prevent environmental problems, social principles for appropriate interactions with nature to explain how past situations came about need to be determined.⁹

The analysis that this chapter provides will begin by exploring the viewpoints put forward by Dovers in some of his works on environmental history. Environmental historians can be of great

⁴ Worster, *Ends of the Earth*, p. 290.

⁵ W. Cronon, ‘The Uses of Environmental History’, *Environmental History Review* (Fall, 1993), p. 13.

⁶ Worster, *The Ends of the Earth*, p. 292.

⁷ *Ibid.*, p. 291.

⁸ *Ibid.*, p. 292.

⁹ Dovers, ‘“Sustainability” and “Pragmatic” Environmental History’, p. 23.

'assistance'¹⁰ when they are engaged in 'an investigation of the study of human impacts and relationships with non-human setting...'¹¹ To arrive at an understanding of the present landscapes and patterns of human activities on natural resources, three categories of relevance need to be considered. These categories are: firstly, the importance of the claim that an understanding of the evolution of human-natural system interconnections will put the current problems into perspective. Secondly, environmental history helps to establish baselines, or, helps to answer the question, 'What was there before and what is there now?' The argument is that a full understanding of changes in natural or human dynamic systems is not possible without knowledge and appreciation of the previous state. Thirdly, environmental history should explore previous responses to environmental change in order to try and establish precedents, warnings or models for policy makers.¹²

In Worster's view there are three levels around which environmental history should operate to combine the humanities and natural sciences. These levels can be regarded as requirements: the understanding of nature itself, the socio-economic realm as it interacts with the environment; and the unique human concepts of values, laws and myths, or how people view nature, which shapes socio-economic adaptations to the environment.¹³ Worster further argues that in any culture the production of food is the 'most basic need and revealing concept of environmental history'.¹⁴ The concept of humans obtaining food has led them to be connected in the most vital, constant, and concrete way to the natural world. According to Worster, this is the idea of agro-ecology that focuses on the examination of the causes and consequences of the rise of capitalist agriculture and its radical simplification of the natural ecological order.¹⁵

In view of the information gathered from the viewpoints and arguments put forward in the works of Dovers and Worster, there is no doubt that environmental history offers sufficient insight into the humanities. This insight will help us understand that the culture and ideologies of people around the world have a great deal to do with the state of the environment and the changes taking place within it. In seeking a sustainable relationship between human and natural systems we must first construct history, establish baselines and identify long-term trends.

For an analysis of how the Cube people could achieve a sustainable relationship with the forest resources, Worster and Dovers' environmental guidelines will be adapted. Although precise

¹⁰ Ibid.

¹¹ S. Dovers, 'On the Contribution of Environmental History to Current Debate and Policy', unpublished paper given at The Environmental History Workshop (University of Natal, Pietermaritzburg, South Africa, July 1996), p. 2.

¹² Ibid., pp. 6-7.

¹³ Worster, *The Ends of the Earth*, p. 292.

¹⁴ Ibid., pp. 292-3.

¹⁵ Ibid., pp. 292-4.

definitions of this discipline may vary from one environmental historian to another, the main concern is always the same: 'the interaction of humans and the environment'.¹⁶ As Carruthers points out, several prominent historians of southern Africa have reflected this concern in the past too, but it is now the explicit focus of an increasing number of environmental historians.¹⁷

Gadgil and Guha's concept of the mode of resource use will be incorporated into the iNkandla study area. The mode of resource use concept was applied in India a largely poor "Third World" country. The iNkandla study area is also in a "Third World" country (South Africa) whose rural societies are also poor. An understanding of the mode of resource use, should enable one to appreciate the change of infrastructure of human society.¹⁸ This implies that different cultural communities have different modes of resource use, which change over time. Regardless of these differences, Gadgil and Guha's concept, when applied in a particular society, is intended to enable one to appreciate the environmental change of that society's mode of resource use over time.

This dissertation investigates not only the relationship between the people and their forest, but also the Cube people's mode of resource use over time, and how it impacted on the change of their forest resources. The concept is that Gadgil and Guha's 'mode of resource use' concept shapes ideology, social and political relationships by extending the realm of production to incorporate natural resources such as, flora, fauna, water and minerals. To Gadgil and Guha, the concept of mode of resource use concept has two dimensions. Firstly, it examines whether a particular ideology can be identified in a society that inevitably governs a certain type of resource use mode. Secondly, a particular mode's impact upon the ecology and its consequences are viewed in terms of the pattern, distribution and availability of natural resources in a particular environment.¹⁹

Gadgil and Guha in their study have identified four historical modes of resource use in seeking to delineate the ecological history of India. These historical modes of resource use are as follows: Firstly, the gathering mode; secondly, nomadic pastorals; thirdly, settled cultivation; and fourthly, the industrial mode.²⁰ These modes of resource use are all relevant to the iNkandla study area. The gathering mode was commonly applied when the first inhabitants arrived in the iNkandla study area. It was then followed by mixed farming/settled cultivation using hoes, ploughs and oxen. Later, at the beginning of the twentieth century when money was introduced to people as a mode of resource use, the industrial mode became dominant.

¹⁶ Ibid., p. 292.

¹⁷ J. Carruthers, 'Towards an environmental history of Southern Africa: some perspectives', *South African Historical Journal*, 23 (1990), pp. 184-5.

¹⁸ Gadgil and Guha, *This Fissured Land*, p. 9.

¹⁹ Ibid., pp. 2-12.

²⁰ Ibid., pp. 6-10.

1.4 AVAILABLE METHODOLOGY

The following is the available methodology for this study:

- Dovers' three categories of relevance and Worster's theory analysed, adapted and applied to the study of the Cube people and their iNkandla forest.
- Gadgil and Guha's methodological approaches, especially the concept of 'mode of resource use' analysed and applied to an environmental history of the Cube people and their forest.
- The oral history and oral traditions that exist in the area of study tested.
- Suitable primary and secondary sources available (in libraries and archives) obtained.
- Nature conservation authorities, game and forest rangers, Cube traditional leaders and local community people interviewed

1.4.1 Methodology

The methodology that will be adapted and applied to this study will follow the practical guidelines put forward by Dovers and Worster.²¹ The writings of the four environmental historians, Dovers, Worster, Gadgil and Guha have suggested guidelines and methodological approaches that can be adapted and applied fruitfully to an environmental history of the Cube people and their forest. Gadgil and Guha as well, provide suitable guidelines by which an understanding of modes of resource use can be achieved among the Cube of the iNkandla region. The views they put forward in their study of India can be related to the relevant levels and requirements of analysis suggested by Dovers and Worster who in turn can be useful to this dissertation.

The information used in this dissertation is drawn from a variety of primary and secondary sources. The oral testimony was obtained through interviews with key informants who included the officer-in-charge of the iNkandla forest and his two forest guards/rangers, as well as three conservation officers based in Eshowe KwaZulu-Natal, from *Ezemvelo* KZN Wildlife; the members of the Cube people and the surrounding local community, particularly those who lived in close proximity to the iNkandla forest, its 'pocket forests' and other forest patches; and the *iNkosi* [chief] Shezi of the Cube people and a number of his *izinduna* [headmen]. Face-to-face interviews and group interviews targeting women, especially household heads, either because they were widows, or because their husbands were migrants, or unemployed, were conducted in the Cube area. These interviews familiarised the researcher with historical information on the Cube people. Most interviews were carried out on a personal basis and a few on the telephone, depending on the availability of the respondent. The former was the predominant method. Some

²¹ Gadgil and Guha, *This Fissured Land*, p. 8.

data were collected through participant observation. The most recent information was gathered through researching oral history and oral traditions.

The researcher was fortunate to be invited to a cultural ceremony conducted by the present *iNkosi* Shezi of the Cube people, for the late *iNkosi* uSigananda ka Zokufa who died in jail in July 1906 after the Bhambatha rebellion (refer thesis cover page photo). The motive behind this ceremony was to unchain Sigananda from the handcuffs, which it was believed, he died wearing. It was also believed that the ceremony would unlock the bad luck and curse that was caused by the situation in which Sigananda died. A beast and several goats were slaughtered. The beast was not eaten by the blood relatives of the Shezi royal family, but by men who were regarded as warriors, or *amabutho*. This was a three-day cultural ceremony where different Cube elderly men and women attended from throughout the chiefdom. This gave the researcher an opportunity to meet and talk to different people about their views and memories of the forest and its resources. The interviews were conducted with various groups and individuals. Several probing questions arose from these interviews which in turn led the investigation to other points of interest and other key informants. All the interviews conducted were recorded on a tape recorder or handwritten.

Information from primary sources was drawn from archival research in the Pietermaritzburg Archival Repository (PAR). Archival research provided information only on the historical part of the Cube people's colonisation that brought about changes in their lifestyle, from the period 1880 to 1906, and some relevant information on the period of the aftermath of the 1906 rebellion. The written information was drawn from secondary sources in articles, journals, published and unpublished historical theses and also the *Ilanga lase Natali* newspaper of 1906-1907.

1.5 LIMITATIONS

Very little information that has been documented focuses solely on the history of the Cube and their relationship with the iNkandla forest. There is also not much documented information on the conservation and biodiversity of the natural resources specifically for the iNkandla forest and its 'pocket forests'. Historically, information on the richness and the beauty of the forest species, both flora and fauna, is not available. The only information available dates from the late twentieth century. From an environmental perspective, there is scanty information specifically about the iNkandla forest and its conservation.

The few available published academic sources on this area of study tend to mention mostly the history of the Cube people. The author's research findings indicate that local people have limited knowledge of natural resources and environmental issues. Some of them do not even regard these issues as an important part of their lives. What most people are concerned with is getting and earning money for subsistence. It must also be stated that collecting oral evidence about the history of the Cube people and their memories about the forest was difficult. Some people have

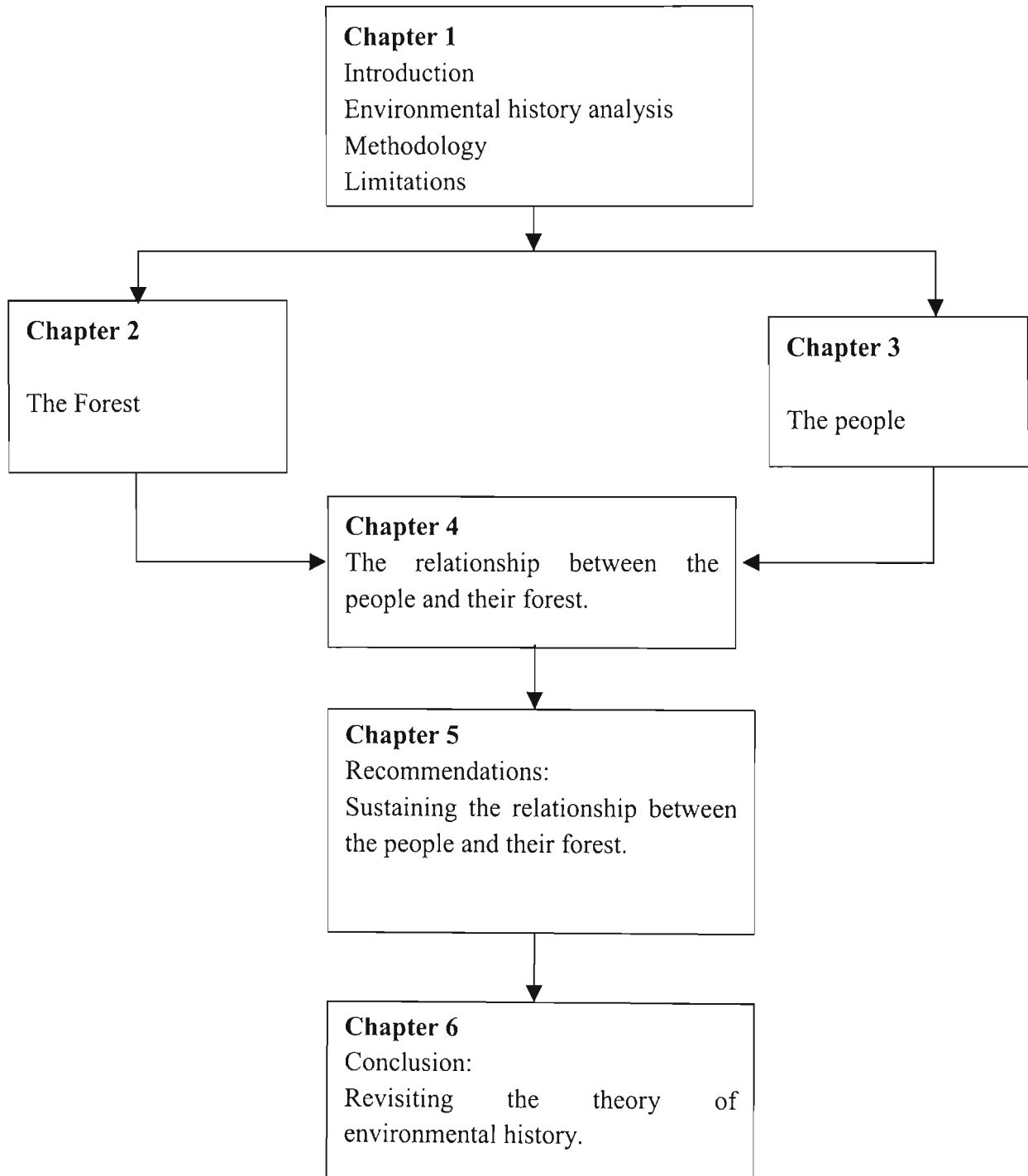
limited knowledge and others hardly remembered what was in the forest before and what is there now. To get such information from the people's side would have enabled the researcher to compare and assess the validity of the statements from the conservation officers. Communities have limited memories of how and when legislation over access to the forest was passed. Some of them were not even sure of how these laws and regulations impacted on their lives because they continued to obtain whatever they wanted in the forest without permission. Although people have limited specific understanding and knowledge of the issues of sustainable conservation and biodiversity of the forest species, they understand in general the importance of the forest to their lives.

Another difficulty that was experienced is that the Cube people have limited memories of specific years in which particular incidents happened (even within their historical past). These are the problems that the researcher encountered which compounded the difficulty of following a chronological sequence of specific events in this dissertation. In addition, some people who were key informants are mostly migrant labourers. Most of the key informants that the researcher was referred to are scattered in places like Ulundi, Mahlabathini, Matubatuba, and Durban. These people only come home once a year at Christmas time.

Most Cube people still lack specific formal understanding of the of conservation of natural resources and the issues of biodiversity. This was revealed when the researcher was trying to get local people's opinions on the issues of the importance of environment and the conservation of forest resources and direct answers were not forthcoming. Therefore, the information gathered on these issues is one-sided because it involves conservation matters which ordinary people do not fully understand.

1.6 STRUCTURE OF THE DISSERTATION'S CHAPTERS

Diagram 1: The structure of the six chapters which this dissertation will follow



With the guidelines and methodology established in Chapter One, Chapter Two, 'The Forest', explores the first and second requirements of relevance that Dovers suggests, namely, 'What was there before and what is there now?' The chapter also deals with the first level of Worster's outlines for environmental history, namely 'understanding nature itself' (natural resources) and the biodiversity of fauna and flora forest species within the iNkandla forest environment. The value of the ecology of the forest is investigated and explored.

Chapter Three, 'The People', (Who are the Cube people?). This chapter explores the change in human dynamic systems through knowledge and appreciation of the previous state. For example, this chapter will answer questions like 'Who are the Cube people and what is their historical background?' For the Cube people, the forces of change involve their skills in ironsmithing and handicraft, the impact of the colonial era, migrant labour and commerce, and the impact of industrial change. The mode of resource use the Cube people implemented in their agricultural and hunting activities will be investigated. The Cube people's continuous reliance on utilising the forest resources for basic material needs will be explored. The history of the people has been influenced by and how human activities have impacted on the forest resources.

In Chapter Four, 'The relationship between the people and their forest', This chapter also explores the second and third levels of Worster's theory and the impact the Cube people's modes of resource use caused to their environment over time. The following issues will be dealt with in this chapter:

- The people's view of the forest and its change with time.
- The goods and services provided by the forest to sustain the people.
- The different roles played by the forest and its resources to meet people's needs. This explains the kind of relationship the people have with their forest.

Chapter Five, 'Recommendations', deals with sustaining the relationship between the people and the forest, while 'putting people first'. This chapter investigates the following issues for sustainable forest resource conservation:

- The environmental changes this relationship imposed on the forest resources and how this situation should be combated
- Sustainable natural conservation approaches that could help save the forest resources for the future.
- Suggested community participation and involvement to put people first in managing sustainable forest resources meaningfully.

This chapter aims to provide recommendations for future developments that Cube people are likely to see, recommendations for the sustainability of the forest, and the developments that could be promoted to sustain the Cube people's relationship with their iNkandla forest. This implies finding the way in which the Cube people can be made to understand the importance of utilising/harvesting their forest in a manner that will preserve, conserve and sustain the natural resources for future generations.

Chapter 6, 'Conclusion' revisits the theory of environmental history. This is a brief outline of how environmental history theory has been applied in this study.

CHAPTER TWO

THE ECOLOGY AND BIODIVERSITY OF THE INKANDLA FOREST

2.1 INTRODUCTION

A brief overview of how the forest would have been prior to significant human impact is described. The concept of forest ecology is defined and its many dimensions outlined. A brief overview of the ecosystem of the forest will be explored to prepare the discussion in chapter four on the relationship of the iNkandla forest and the Cube people. An understanding of the ecological relationship of the fauna and flora, which form key structural components of the forest ecosystem, will be provided. The chapter also investigates and explores the forest now, and it concludes by highlighting the significant value the forest holds as the second largest indigenous forest in KwaZulu-Natal (KZN). It is hoped that this understanding will promote valuable and effective recommendations for the future sustainable conservation and management of the forest.

2.2 LOCATION

The iNkandla Forest is one of the indigenous forests in the Cube chiefdom and is situated within the magisterial district of the iNkandla region. This indigenous forest has surrounding 'pocket forests' of Mome, Vungwini, and Sibhudeni, and other forest patches. The iNkandla forest is situated at approximately 28⁰50'E and 31⁰15' S in a scenic area, fragmented by numerous incised valleys that lie along the Natal monocline and the topography is very rugged (see Map 2, p. 13). Its altitude varies between 600 and 1000 meters. Most of the land in the study area is steeper than 1.6 (see Plate 1 and 2, p. 14). The most distinct feature is the immense erosion trough constituted by the uThukela River and its large tributary, the uMzinyathi (Buffalo) River, which is excavated to the depth of several hundred meters below the adjacent country.²² By road it is 30km from iNkandla village, and 50km from the town of Eshowe. It is coastal hinterland, a strip of land in KZN that runs parallel to the coast.

2.3 OVERVIEW OF THE INKANDLA FOREST







The iNkandla forest is amongst the largest of the forests in KwaZulu-Natal (see Plate 3, p. 15). It is composed of a core forest (main forest which is a reserve) that is surrounded by a number of smaller forest patches ('pocket forests'). This is a Mist Belt Mixed Podocarpus forest, which is a widespread forest type occurring in the Midlands of KZN in South Africa, and is known to be the best remaining representative of this type. The iNkandla forest is located at the upper edge of the

²² A. du Toit, *The Geology of the country surrounding Nkandla, Natal: An Explanation of sheet Geological Surveys No. 109 Nkandla*, Pretoria, South Africa, Department of Mines and Industries, Government Printer, 1930s, p. 10.

TOPOGRAPHIC MAP

OUTLINING CUBE STUDY AREA

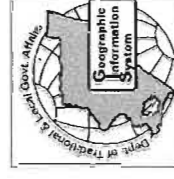
Legend

-  Cube Chiefdom
-  1:50 000 Topographic Scans images
-  image 2830 db
-  image 2830 dd
-  image 2831 ca
-  image 2831 cc



Kilometres

Date Produced: 11-02-2000
Project Name: Cube_1a.apr



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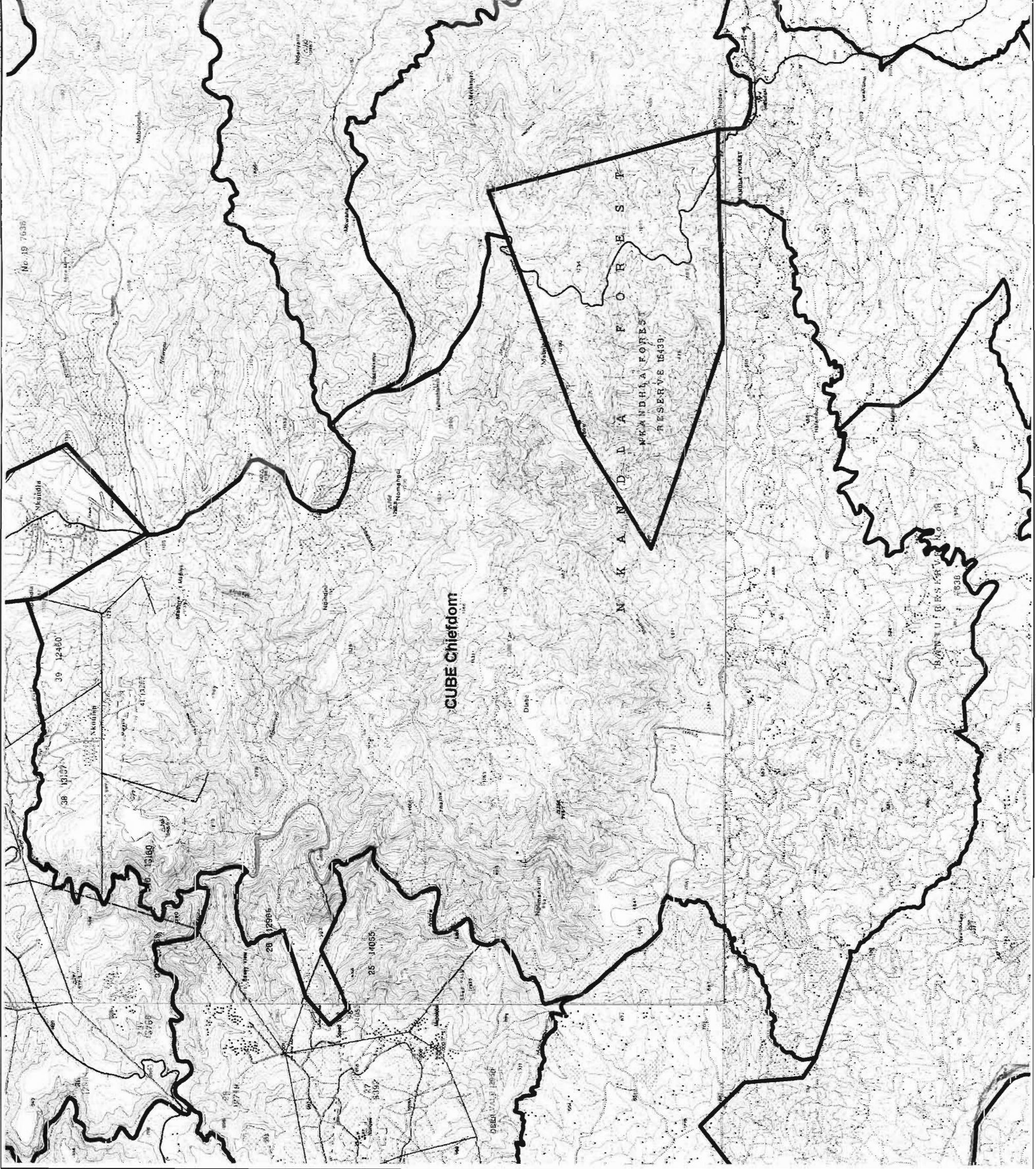




Plate 1: showing the rugged terrain of the iNkandla study area



Plate 2: showing the steep slopes of the iNkandla study area

Ngongoni veld type, with all forests surrounded by wire grass (*ingongoni*) dominated grassland.²³ This is a rare and relict type of high, wet rain forest of which very few examples survive. It supports a variety of rare plants. Like all other indigenous forests in Southern Africa, the iNkandla forest is defined as ‘a closed-canopy, multi-strata community of evergreen-dominated indigenous trees’.²⁴ Indigenous forests have always been a rare habitat-type in southern Africa. The iNkandla forest area under the control of the then Department of Forestry was about 5 460 acres (approximately, 2 480 hectares) between the Nsuzi and Mhlathuze Rivers.²⁵

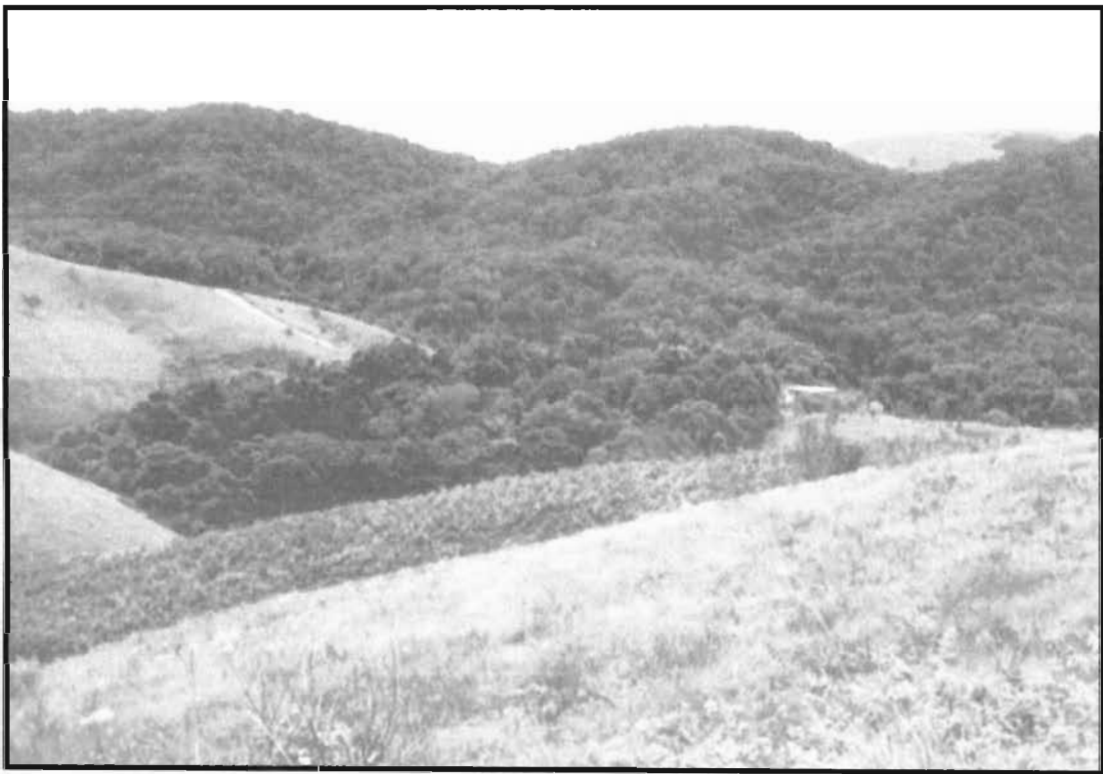


Plate 1: Overview of the iNkandla Forest

²³ J.P.H. Acocks, *Veld types of South Africa*, Memoirs of the Botanical Survey of South Africa No. 5, 1988, pp. 20-29.

²⁴ Wildlife Society, *Indigenous Forest Survey*, 1985, p. 10; K.H Cooper & W. Swart, *Transkei Forest Survey*, Transkei, 1992, pp. 30-33.

²⁵ D. Edwards, *A plant ecological survey of the Tugela River Basin*, Natal, Town and Regional Planning Commission, Memoir of Botanical Survey of South Africa, No. 36, 1967, p. 83.

2.4 BIOPHYSICAL FORCES THAT SHAPED THE INKANDLA LANDSCAPE

The geology of the iNkandla area is very complex, owing to the history of deformation and metamorphism of the original geological formations. The intrusions into these rocks of hot molten magma from below produced the granite exposures of the iNkandla area.²⁶ The forest is underlain by very ancient rock formations, most of which have been deformed and altered by the effects of pressure and temperature. This has led to a very complex geology consisting primarily of metamorphic igneous rocks. The underlying rock consists mainly of quartzite and granite. Within the iNkandla forest boundaries, quartzite and quartz schists of the iNkandla series underlie about 45% of the area. Approximately 30% of the area are represented by quartzite, with occasional thin conglomerates of the Nsuzi series while the granite and granite gneiss makes up most of the remaining areas.²⁷

The topography of the iNkandla area is characterised by deep valleys with steep slopes and is susceptible to erosion.²⁸ Its topography is generally rugged, with most rocky outcrops in this highly vegetated area being exposed in deeply incised valleys, and some hillsides.²⁹ The area is criss-crossed by numerous streams, springs and rivers.

The soils are often shallow and usually have weathered underlying parent material due to the high rainfall of the area. The grassland slopes have soils which are acidic and leached, derived from Insuzi, iNkandla and Archaic Granite geological formations.³⁰ In the less steep midslope, shallow to moderately deep soils have formed. Fairly deep soils occur at the bottom of some of the minor valleys.³¹ It is known from long observation and experience that soils reflect accurately the combined action of the environmental factors, which are climate, vegetation and living organisms on parent materials. This action is modified by topography and it has taken place over long periods of time. Consequently, if soil series are grouped genetically, the resulting classes will for the most part be correlated with environmental, geological and landscape features, which are readily appreciated.³²

²⁶ V. von Brunn, 'Geology: Nkandla Forest Reserve Region, Vol. 1', University of Natal, Pietermaritzburg, Centre for Environment and Development (CEAD), Nkandla Melting Pot-Resources Pack, 1999, p. 20.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Anon, 'Nkandla Forest Reserve and Surrounding areas management and development Plan', University of Natal, Pietermaritzburg, Centre for Environment and Development (CEAD), Nkandla Melting Pot-Resources Pack, 1999, pp. 24-25.

³⁰ Interview, B. Guy, Ezemvelo Wildlife Society-Eshowe regional ecologist, 5 August 1999.

³¹ Macfarlane et.al, 'Resources of the Nkandla Forest Reserve', University of Natal, Pietermaritzburg, Centre for Environment and Development (CEAD), Nkandla Melting Pot-Group Report, 1999, p. 4.

³² Edwards, *A Plant Ecological Survey of the Tugela River Basin*, p. 203.

The climate is generally warm and humid, with temperatures ranging from 2,3⁰C to 41,7⁰C. The daily maximum in December and January is 30⁰C sometimes, and most of the rainfall is experienced during this season. The mean annual rainfall is between 1 000mm and 1 500mm although up to 2 019.3 mm has been recorded. In April to September the temperature varies between 20-25⁰C, the low minimum temperatures are often less than 7,5⁰C. In the winter season it has an average of 12,5⁰C. The warm temperatures experienced during the year verage 22,9⁰C. Mist is common in the reserve and is an important proportion of the precipitation experienced. Severe frost is not experienced, as the cold air is able to drain away into the valleys at night.³³ On the exposed upper margin of the forest, wind effects are apparent but most of the forest is protected from the hot and dry northwest Berg winds. The climate determines below-ground temperature, moisture, carbon dioxide and the weathering of nutrients from rock substrate. Both climate and precipitation are important in determining the soil processes and soil development.

2.5 ECOLOGICAL STRUCTURES, FUNCTIONS AND BIODIVERSITY OF THE INKANDLA FOREST

2.5.1 What is a forest?

The forest is more than just a stand of trees or a community of woody and herbaceous plants. It is a closed canopy, multi-strata community of evergreen-dominated trees. It is a complex ecological system, characterised by a layered structure of functional parts.³⁴ Geldenhuys describes the forest as a 'lush green foliage, tall trees, monkey ropes, ferns, beautiful but shy birds, a moist, cool and shady environment'.³⁵ This is what comes to mind when someone talks about forests. Geldenhuys' description of a forest is in keeping with what is behind the scenic beauty of iNkandla forest. But how does this forest manage to persist under the pressure of people and the environment? Like all other forests in South Africa, the iNkandla forest system has several very specific characteristics: a mild disturbance regime, a buffered internal microclimate, a shallow root system and closed nutrient cycle, and diverse growth forms organised in layered communities.³⁶ . A forest is typically dome-shaped. Within this dome, the shade, decomposing vegetation, reduced wind movement, water retention and other factors modify the microclimate so that temperatures are moderate and humidity high. It is this dome and its associated characteristics that give rise to the rich, diverse and specialised environment that we think of as a forest.³⁷

³³ Ibid.

³⁴ B.V. Barnes et al, *Forest Ecology*, fourth edition, United States of America, John Wiley and Sons, Inc., 1998, p. 1.

³⁵ C.J. Geldenhuys, *The present status and future of the Southern African evergreen forests*, Proceedings of the Twelfth Plenary Meeting of AETFAT, 1990, Mitteilungen Institute fur Allgemeine Botanik Hamburg Band 23a, pp. 301-320.

³⁶ Ibid., pp. 310-320.

³⁷ Ibid.; Barnes, *Forest Ecology*, pp. 1-5.

2.5.2 Forest Structure

Every forest has different layers of plants that form a horizontal structure. There are five basic layers and these are the canopy, the understorey, the shrub layer, the herb layer and the forest floor. Each of these five basic layers is critical to certain dependent species and each has an important role to play in the overall forest ecosystem. Each layer of the forest structure serves to modify physical influences such as light intensity, light quality, wind velocity, temperature, water quantity, relative humidity and evaporation rate. These elements filter down through the forest canopy, the understudy, the shrub layer, the herb layer and finally into the soil on the forest floor.³⁸

The overall forest ecosystem health and productivity is dependent on maintaining all the five various layers of the forest. The forest stand structure is connected to a larger landscape and is vital to many species in the forest. It is this connectivity that needs to be maintained in order to protect habitat for many species. There are two critical ways in which connectivity can be maintained. Firstly, product removal and other activities should not substantially alter the structural integrity and connectivity of the forest. Secondly, known ecological functions that might be placed at risk as a result of those activities should be avoided and or minimised.³⁹

2.5.3 What is forest ecology?

Ecology is the study of ecological systems and their interacting abiotic (non-living) and biotic (living) components. Forest ecology is concerned with the structure, composition and function of forests as landscape ecosystems. The term ecosystem is a generic term for volumetric units of nature that extend downward from the largest ecosystem. Ecosystems are communities of different living species interacting with one another and their physical environment. An ecosystem consists of abiotic (water, air, nutrients and sunlight) and biotic (plants, animals and micro-organisms) components. Ecosystems come in different sizes from a few trees to an entire forest.⁴⁰ The physical environment and the forest community are interacting components of forest ecosystems that are operationally inseparable.⁴¹ A forest is a complex ecosystem characterised by a variety of trees, lesser plants and associated animal communities. Light is a very important factor. Most sunlight is captured by large shade-producing trees, and diminishes with each lower level so that various strategies for maximising available light can be observed in each layer. The tree canopy not only uses most sunlight, but also produces the most leaves,

³⁸ Ibid.

³⁹ Alan Rike Drengson & Duncan MacDonald Taylor, *Ecoforestry: The art and science of sustainable forest use*, United States of America, New Society Publishers, 1997, p. 37.

⁴⁰ Barnes, et.al., *Forest Ecology*, pp. 10-22.

⁴¹ Ibid., pp. 1-2 and 17.

which fall to build up on the forest floor. Decomposers ensure that these nutrients are recycled in the system. Forest ecosystem dynamics bring into focus the functional relationships of physical environment and the biota. It also investigates how natural and human induced disturbances alter the ecosystem.⁴²

The forest ecosystem can also be likened to a web of life where all species are interconnected and dependent on each other through food chains, pollination or other parasitic relationships. The primary producers form the basis of the food chain that supports all other plants and animal life. They are made of green plants that convert the sun's energy into diverse food forms. Those plants and animals that feed on primary producers are known as primary consumers and those that feed on primary consumers are secondary consumers. When any of these die they fall into the forest floor. Decomposers feed on and convert these 'ground living being'⁴³ into nutrients for new plants and animal growth. This is a natural food cycle and is a continuously repeating process. Drengson and Taylor argued that the 'more intricate the web of life, the more stable a forest is likely to be'.⁴⁴ Furthermore, if too many relationships are disrupted, a forest can cease to function fully and it can die. It is crucial that the whole web of life is maintained for forest sustainability and growth.⁴⁵

2.5.4 The role of climate, soils and water in forest ecology

The change in soil and water conditions is determined and caused by climate changes. Climate, soil and water determine what can live in that area.⁴⁶ Drengson and Taylor argued that climate, soil and water, should not be altered by activities to the extent that existing naturally associated species would be unable to thrive. It was further stated that canopy dominants have a major influence on the climate, soil and water, and they also influence the kind of plant species that will make up the forest structure. The plant species in turn determine opportunities for certain animal species. The species below the canopy will depend on the canopy above for their survival. Therefore, canopy dominants are critically important for sustaining the forest ecosystem's health and productivity.⁴⁷ It is also crucial that canopy dominants are maintained because they help determine the lives of other species in the structures below them.

⁴² Ibid., p. 1.

⁴³ Ibid.

⁴⁴ Drengson & Taylor, *Ecoforestry*, p. 39.

⁴⁵ Ibid.

⁴⁶ Ibid., p.37.

⁴⁷ Ibid., p. 38.

2.5.5 *The role of biodiversity and ecotones in forest ecology*

Forest animals and plants have evolved together and are dependent on each other. A fully functioning ecosystem will retain the biodiversity, complexity and richness in each site and across the landscape to allow for this co-evolution to proceed.⁴⁸ It is part of forest ecological structures, processes and functions that suitable biodiversity is retained. It is reduced when plants and animals lose their habitats. The same rule applies to ecotones, which also need to be retained with suitable habitat for all naturally associated species. Ecotones are transition areas where different kinds of native ecosystems join, and they are among the most sensitive areas. Ecotones are areas where there can be a critical balance between two ecosystems and this implies that many more plant species live there than in adjoining ecosystems. More plant species usually mean more animal species, many of which depend upon both ecosystems for their survival. For example, species that forage in openings need cover for hiding in a nearby forest, and they serve as buffers for species invading one ecosystem from another. Therefore, ecotones like any others, need to be retained with suitable habitats for all naturally associated species.⁴⁹ It is important that natural resources be sustainably managed; in this way biodiversity is maintained. Maintaining the biodiversity of an area means there are more organisms, which can breed and flourish, and in turn support other life forms.

2.5.6 *Ecological history of the iNkandla forest*

It is not known what had happened in the iNkandla forest during the early nineteenth century and prior to that, in terms of the pressures exerted by people and the environment. There is no documentation of what the forest looked like, hence we have adapted Geldenhuys' description to portray a picture of what this forest looked like then.⁵⁰ We cannot even estimate the species richness, of both flora and fauna that existed in this forest then. Some historians believed that iNkandla forest was of 'immense antiquity and majesty'.⁵¹ It can be assumed that the forest was indeed rich in natural resources. Due to difficulty of access to it, it had not received much attention from timber harvesters. But it could not be regarded as intact because of other natural environmental impacts that will be discussed below.

2.6 FOREST PLANT COMMUNITY

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Geldenhuys, *The present status and future of the Southern African evergreen forests*, p. 303.

⁵¹ J. Stuart, *A History of the Zulu Rebellion in 1906 and Dinuzulu arrest, trial and expatriation*, New York, Negro University Press, 1969, p 246.

The extent of a forest is determined by many factors, mainly the forest plant community consisting of forest margin trees, herb layer, understorey trees, canopy trees, emergent trees, lianas/creepers, epiphytes, fungi, leaf litter/soil and alien plants which will be briefly discussed.⁵² The forest margin or forest ecotone is where environmental conditions become unsuitable, it merges into adjacent ecosystems and certain plants grow in this transitional zone. These plants serve as a kind of buffer zone for the forest, preventing fires and other potentially harmful abiotic and biotic factors/effects from reaching the forest and damaging it. This zone provides a humus layer and shade for the young forest. It also prepares the area for the expansion of the forest and allows the process of 'succession' to occur.⁵³ The forest margin/ecotone is a rich area for wildlife and more animals, birds and insects occur in the ecotone than in the mature or climax parts of the forest.

The herb layer is formed by the plants, which grow at ground level or slightly above. There are often annual plants, which grow in summer and die back in winter. Mammals such as bushbuck and blue duiker are dependent on this layer for food. Many insects also live within this layer, as well as small mammals such as mice and shrews. Plants such as ferns, mosses and many fungi are found in this layer.⁵⁴ The understorey of a forest consists of those plants, which grow beneath the canopy but not right on the ground. It contains plants adapted for living in shaded conditions as well as emergent trees. The understorey is relatively windless and has fairly consistent humidity and temperature, regulated by the canopy which acts as a protective dome. The protection offered by the understorey allows many animals to make their homes in this layer. There is also a community of organisms in this zone separate from the canopy and herb layer, but which has links with these communities. Birds are hard to see in this layer but may be found where trees are in flower or fruit.⁵⁵

The canopy of a forest is composed of many tree species, which form a continuous cover over the whole forest. This cover or canopy forms a sheltering dome allowing sunlight through in patches and shading the plants below from direct heat and light. It also keeps the humidity in the forest fairly constant as it prevents excessive wind from entering and slows evapo-transpiration rates. There is an entire plant and animal community dependant on and living in the canopy. When a canopy tree dies, it often collapses, opening up an area below to direct sunlight. This acts

⁵² Adapted from T. Wright, 'A forest community windows on the Wild: A field guide', Howick, A Share-Net Resource, 2000, p. 8.

⁵³ 'Succession' is a process whereby hardy plants known as pioneers start growing in a bare or disturbed area. These pioneer plants slowly improve the conditions of the area and in doing so create the conditions for other less hardy plants to grow. Each plant group successively improves conditions further until they are themselves replaced. A climax stage is reached when the plant community is in equilibrium with the environment.

⁵⁴ T. Wright, 'A forest community windows on the wild: A field guide', Howick, A Share-Net Resource, 2000, p. 5.

⁵⁵ Ibid., pp. 7-8.

as a stimulus to seedlings of other secondary tree and plant species including canopy tree species, which grow rapidly towards the light and occupy the hole in the canopy. Lianas and creepers use canopy trees as a support to climb towards the full sunlight.⁵⁶

Lianas and creepers are plants that use trees and existing plants as supports to climb towards the sunlight. Some creepers may smother the plant that they climb and eventually kill it. The lianas and creepers have roots in the ground from which they derive their nutrients and water, and use the tree that they climb purely as a support. They are used by insects such as ants, bird and monkeys.⁵⁷ Emergent trees are large, tall trees characterised by the fact they protrude above the forest canopy. Their tendency to grow above the canopy means direct access to full sunlight, enabling effective photosynthesis. These emergent crowns support whole aerial ecosystems, and the life cycles of the plants and animals within this system take place far above the ground. Several species of butterflies live in the emergents; these in turn are preyed on by spiders, and birds. A crowned eagle nesting in the emergent tree could be the highest occurring carnivore.⁵⁸

Leaf litter/soil is the lowest visible layer in the forest and it is one of the most important. The leaves and branches of forest trees are constantly falling to the ground and they are broken down by decomposer organisms such as bacteria and fungi to form humus which feeds the roots of plants in the soil with nutrients. This is one way in which the forest nurtures itself and is a self-sustaining ecosystem. If the humus layer were to be removed the forest would die.⁵⁹

2.7. HISTORICAL DISTRIBUTION

The forest size

It is commonly believed that the destructive activities of humans during the past has caused the fragmentation of forests within the grassland and fynbos biomes. However, according to Geldenhuys, the changes in forest area due to human impact are small when compared to the changes induced by natural environmental change over millions of years. Over that period, the climate fluctuated between warm and moist periods, when forests expanded, and cold and dry periods when forests retreated. The fragmentation of the forest belt was associated with spread of the savanna, grassland, karoo, and fynbos biomes.⁶⁰ As forest size decreases, so the ratio of perimeter to area increases, this means that smaller patches will have a greater proportion of edge habitat while large patches will have a greater proportion of interior habitat.⁶¹

⁵⁶Ibid., p. 9.

⁵⁷ Ibid., p. 13.

⁵⁸ Ibid., p. 11.

⁵⁹ Ibid., p. 16.

⁶⁰ Geldenhuys, *The present status and future of the Southern African evergreen forests*, pp. 301-320.

⁶¹ Macfarlane et.al, 'Resources of the Nkandla Forest Reserve', p. 22.

2.8 FOREST DISTURBANCE

Wind and fire

Wind plays an important role in the life history of trees; for example, many trees rely on wind for pollination. In dense forest or areas where wind is inadequate they rely on animals as pollinators or dispersal agents. Wind determines the growth form of forest trees. Wind may also alter growth forms on exposed shores and treeline in mountainous areas. It may also cause stress-related changes in growth, abrasion of leaves and twigs and can induce transpiration losses. Winds could cause the breakage of large branches or occasionally uproot a single tree or a small group of trees.⁶²

A major disturbance factor is fire, which is associated with prevailing winds during dry periods. When the winds are associated with fire, whether caused by lightning or human action, the fire follows the flow direction of the wind and will destroy forest along that route. Therefore, forests are only able to persist in the shadow areas on the leeward side of the mountains. Also, fires will usually follow a course up or down the crest of a ridge, and will not easily burn down or up a narrow valley.⁶³ This is a typical pattern of forest distribution throughout southern Africa. This pattern is also evident in the iNkandla forest.

2.9 OTHER FOREST DISTURBANCES

Lightning may cause a fire or kill a small group of trees. It is interesting that some trees, such as the black stinkwood (*Ocotea bullata*), can recover from such strikes by resprouting, whereas others, such as the Cape beech (*Rapanea melanophloeos*) are easily killed. Hail, if it occurs very frequently, can also be a natural cause of forest disturbance. In northern KwaZulu-Natal, it has been reported that cyclones occasionally flatten large parts of the coastal forests, although such incidents have never been recorded in iNkandla forest. However, some trees die standing from old age or some form of disease and stress. The effects of a severe drought can contribute to forest disturbance.⁶⁴

Other forest disturbance can be animal damage. Animals browse, chew, gnaw, pierce, strip, fell and trample woody plants. Every animal group inhabiting forestland can be cited for causing some kind of damage. However, the incalculable positive influence of animals on ecosystem structure and function cannot be overlooked. From seed and seedling to mature tree, no forest tree is exempt from animal damage. For example, some seeds and fruits that reach maturity are

⁶² Barnes, et.al. *Forest Ecology*, p. 15.

⁶³ Geldenhuys, *The present status and future of the Southern African evergreen forests*, pp. 301-320.

⁶⁴ *Ibid.*, pp. 301-320.

widely consumed and destroyed by various insects, birds and small mammals that limit regeneration completely.⁶⁵

2.10 INFLUENCE OF LARGE ANIMALS ON FOREST ECOSYSTEMS

The activities of humans, cattle, sheep, goats and other animals result in substantial changes in forest ecosystems. Humans have had a far-reaching and pervasive influence through a variety of direct and indirect activities. One of these, the introduction of hooved grazing and browsing animals, has a great potential for effecting change. Heavy single-species grazing pressure can cause changes in the entire structure of the plant community. For example, some woodlands may turn into grasslands. The direct effects of heavy grazing result largely from action of animal hoofs in compacting the surface soil and in breaking up the ground cover which can cause surface runoff. Biotic activity is minimized in highly compacted grazed soils and this can greatly affect forest regeneration.⁶⁶ Furthermore, the field layer of the forest is poor, due to low moisture level and the presence of cattle grazing inside the forest.⁶⁷

2.11 THE FOREST NOW

There are few detailed accounts in the literature on the floristic composition of the iNkandla forest, and its fauna. This forest has a history of being a place of refuge for several Zulu leaders and the Cube people. Unlike other inland KwaZulu-Natal forests, iNkandla did not experience a period of exploitation by European woodcutters and sawyers. In a recent study of the iNkandla forest conducted by McPherson,⁶⁸ the author states that the entire forested area covers more or less 3100ha at altitudes ranging from 800m to 1370m on predominantly southerly aspects, although some forest on north-facing slopes does occur. McPherson reveals that the 'forest was disappointing as the trees were poor in bulk practically tall poles', but he argues that the regrowth was 'vigorous and plentiful'.⁶⁹

2.12 WHAT TO EXPECT IN THE INKANDLA FOREST

The most important thing to expect in the iNkandla forest is its scenic beauty, birds, and different tree species. Although there are not many animal species at present, there are limited game

⁶⁵ Barnes et.al. *Forest Ecology*, p. 350.

⁶⁶ Ibid., pp. 355-356.

⁶⁷ Ibid., pp. 83-84.

⁶⁸ W. MacPherson, 'The recovery of an afromontane forest after slash and burn: A case study from the iNkandla forest', A Masters student from the Centre of Environment and Development (CEAD), University of Natal, Pietermaritzburg, 1999-2000. NB: When this statement was quoted the student concerned had not yet finished his thesis.

⁶⁹ Ibid.

species that still exist. The iNkandla forest officer has started to document some species that exist in the forest. The process is slow because species composition of the iNkandla forest has not been satisfactorily documented to date. There are newly discovered rare species like, Red Ironwood (*isibhanku*), Natal flame bush (*uncumane*), and Terblans Beech (*isiqalaba*).⁷⁰ A number of South African endemic species with special distributions occurs within this forest. For example, Red Alder (*umhlalane*) are mostly endemic to the Eastern Cape and Transkei, but are also found in the iNkandla Forest.⁷¹ Natal wing-nut (*inona*) is a very rare species, which also occurs in this forest. There are numerous forb species in the forest interior, including orchids, ferns and mosses of which little is currently known.⁷² Although forbs are common, ground cover is generally low. Areas where light does penetrate may support a relatively dense cover of grass and shrubs.⁷³

2.13 THE VALUE OF THE INKANDLA FOREST

The indigenous iNkandla forest, like all other indigenous forests, plays a key role in water conservation by acting as a sponge in high rainfall zones, absorbing rainwater into sub-terranean aquifers and releasing it slowly throughout the year into the streams and rivers. This is important in the dry winter months when the rainfall is either absent or very low. Forest streams generally flow throughout the year because the forest conserves the rainfall and acts as a natural reservoir to the springs. Forests have an important hydrological function; they act as water-retaining sponges, slow the rate of water flow, and help to purify water flowing through them by trapping silt. The iNkandla forest as both a renewable and an ecological entity, prevents soil erosion by protecting the soil surface in high rainfall areas, and in so doing decreases the potential sediment level of the Thukela and Mhlathuze Rivers into which those streams, beginning in the forest valleys, eventually lead. The impact of raindrops is reduced by trees and shrubs, and because of the high moisture content of forest soils, rainwater is readily absorbed and run-off or loss of soil from these areas is minimal. Furthermore, the accumulation of organic matter in the forest helps build up soils.⁷⁴

The iNkandla Forest helps to purify air by the absorption of carbon dioxide and the release of oxygen into the atmosphere. This is of considerable significance with respect to the potential

⁷⁰ The three species mentioned were identified for the first time during the study that was carried out by the class of 1999 Masters students, from the Centre of Environment and Development (CEAD), University of Natal, Pietermaritzburg.

⁷¹ Interview, R. Scot-Shaw, KZNNCS a tree expert, Eshowe KZNNCS, 5 August 1999; E. Pooley, A field guide to wild flowers: KwaZulu-Natal and the eastern region, Natal Flora Publications Trust, Durban, 1998, p. 26; Mcfarlane et al., 'Resources of Nkandla Forest Reserve, p. 13.

⁷² Ibid.

⁷³ Edwards, *A plant ecological survey of the Tugela River Basin*, pp. 15-25.

⁷⁴ Anon, 'Nkandla Forest Reserve and Surrounding Areas Management and Development Plan', pp. 24-25.

threat of global warming. Forests are a unique ecosystem and habitat-type and form part of one of the world's major biomes, so it is important that they are protected and conserved from excessive human exploitation. Forests are important for wildlife since many species of fauna and flora are confined to the forest biomes and cannot survive outside them.⁷⁵ Forests are vital to life on earth as they play an essential role in producing and regulating oxygen and carbon dioxide levels, reducing wind and increasing water retention.

2.14 CONCLUSION

The iNkandla forest, like all indigenous forests, provides a unique genetic bank of species diversity all with different attributes. The main elements of sustainability are forest structures, climate, soil, water and air quality, preservation of canopy dominants, maintenance of diversity, protection of ecotones, preservation of genetic base and reproductive habitat, and overall respect for the great interconnected web of life that communities in natural forest ecosystems represent. All our practices should be tailored to the requirements of specific forest ecosystem, and forest stands, within a landscape and watershed.

⁷⁵ Ibid., pp. 26-30.

CHAPTER THREE THE PEOPLE

3.1 INTRODUCTION

The chapter investigates and outlines the historical background of the Cube people from the 1820s to 2000. It provides information on the Cube people's lifestyle then and now. This chapter locates the Cube people in their Zululand context. It goes on to describe their chiefdom, changes in lifestyle influenced by colonisation, and the political and economic pressures the young men of the iNkandla area were faced with, for example how they were obliged to leave their homes and move to cities in search of jobs in order to pay government taxes. It also highlights the beginning of poverty amongst the people of this once fertile land.

3.2 LOCATION OF THE CUBE LAND IN THE INKANDLA AREA

The Cube area is located in the old reserves of Natal and Zululand, which subsequently formed the homeland of KwaZulu in the 1970s and became integrated into KwaZulu-Natal (KZN) after 1994 (see Map 3, p. 28). The Cube land under the iNkosi Shezi is to the north, west and south west of the iNkandla forest. This area comprises rough and broken terrain regarded as unsuitable for large-scale commercial farming, and today tends to remain poor, marginalised, and by-passed by development and without an effective transport infrastructure.

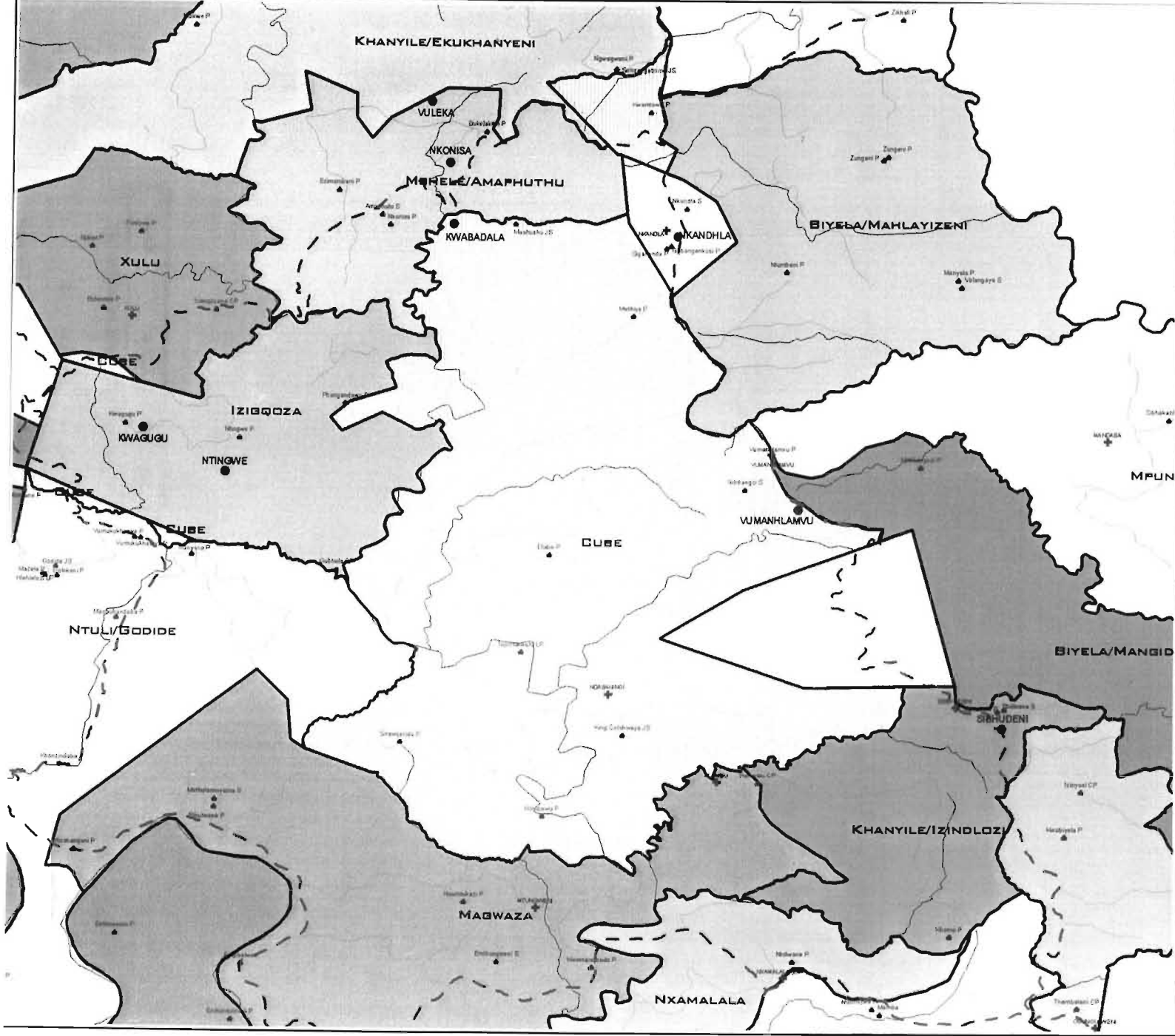
3.3 THE PERIOD PRE-1820S

3.3.1 *The historical context of the Cube people*

It is difficult to establish where the Cube people originated from and they cannot be regarded as the first inhabitants of the area they occupy. It has been accepted that local and oral traditions do not go back earlier than the beginning of the Late Iron Age, that is, A.D.1000,⁷⁶ whilst the memories of the present Cube community go as far back as the 1906 Rebellion. The present state of archaeological research suggests that domestic animals, such as cattle, sheep, goats and dogs, still common among the Cube people, were first introduced by the Iron Age people. The Iron Age people were believed to be black and spoke the 'Bantu Language'.⁷⁷ These people commonly lived on valley bottoms of major rivers like the Thukela and Mzinyathi. They preferred living in areas along the coastal belt where there was good deep soil, sweet year round grazing for livestock and timber for fuel and building. During the 15th and 16th centuries, people

⁷⁶ Edwards, *A Plant Ecological Survey of the Tugela River Basin*, p. 20; T. Maggs, 'The Iron Age Farming Communities', in A. Duminy and B. Guest (ed), *Natal and Zululand from the earliest times in 1910: A new history*, Pietermaritzburg, University of Natal Press, 1989, p.10 .

⁷⁷ Ibid.



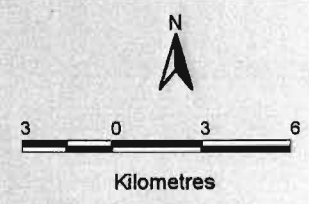
LOCATIONAL MAP

CUBE CHIEFDOM

Legend

Cube Chiefdom

- Health Facilities
- Schools
- Small Towns
- National Roads
- - Provincial Roads
- Rivers
- Community Access Roads



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Map 3: The boundaries of the Cube chiefdom

started to settle in warmer ecological regions, and the iNkandla area in Zululand was one of them. The boundaries of the Cube chiefdom people brought cattle along with them, as they were their principal standard of wealth and they also owned goats.⁷⁸ Tillage of land was based on a shifting system of agriculture. They were hunter-gatherers who used fire to provide green grazing for cattle. Veld was burnt at any time of the year. Agricultural activities allowed for the spread of grasslands, which enabled people to become stock keepers.⁷⁹ These activities ended in the first quarter of the 19th Century. This period of freedom, movement and available space ended with the reign of Shaka Zulu from 1818 to 1828.⁸⁰

3.4. THE PERIOD 1820-1879

3.4.1 *The Cube people*

The Cube people lived in small villages, some clustered and others scattered, near which they practised shifting agriculture in small gardens that were situated directly below the 'kraal' (homestead) and receiving 'kraal' (homestead) manure from rainwater runoff. The homesteads of the Cube people in the 1820s were built in a circular form on dry and sloping ground with the main entrance at the bottom and the cattle kraal in the centre. The homesteads were made out of grass and wood, and homes were shaped like a beehive. Cattle were of basic material importance. For example, a man's success in life was symbolised by the size of the cattle fold, and a man's wealth was calculated in terms of cattle. Most ceremonies and rituals were performed using cattle and sometimes both cattle and goats.⁸¹

Apart from using the pastures, people (mostly women) tilled the soil in small and scattered fields of irregular shapes using hoes. It was the duty of a woman to cultivate and work in the fields. Men cared for cattle, built and repaired fences and homesteads, made woodcrafts, and cleared the ground for cultivation. When maize was introduced in the 18th Century, sorghum and millet that formed part of their staple diet, became a less favoured food crop. The common vegetables that were grown in the area were *amaphuzi* (pumpkin), which is large and light brown, as well as two types of melons commonly known as *ikhabe* and *ibhece*.⁸² Kidney beans (*ubhontshisi*) is still a common crop. The Cube people as hunter-gatherers, were known as *amaphisi* (hunters). The present *iNkosi* Shezi spends his leisure time hunting.⁸³

⁷⁸ Ibid., pp. 20-22.

⁷⁹ Ibid.

⁸⁰ J. Laband, *Rope of Sand: The Rise and Fall of the Zulu Kingdom in the Nineteenth Century*, Johannesburg, Jonathan Ball Publishers, 1995, pp 10-20.

⁸¹ Ibid.

⁸² Interview, Reggie Khumalo, researcher and radio presenter, Ulundi, 30 September 1999; Mfohloza Shezi of the Cube clan and a relative to the *iNkosi* Shezi, 30 September 1999 [They were both present at the Sigandanda ceremony that was held on the 30 September 1999].

⁸³ Interview, *iNkosi* Shezi of the Cube chiefdom, eDlabe, 30 July 1999.

The Cube men were famous ironsmiths. Iron weapons and agricultural implements were made from iron ore that was mined and smelted within the area of study. Great fires were lighted by twirling sticks from the *Uluzi* trees. Secret medicines were placed in the fires and the metal was smelted from the ore. When the fires died down skilled Cube blacksmiths took blobs of metal from the ashes and set to work hammering out spears, knives, hoes, axes and bangles. The completed tools were taken to the iNsuze River to be sharpened on the whetstones found there.⁸⁴

3.4.2 *The longstanding relationship between the Cube people and the Zulu Royal House (1820-1879)*

In the 1820s on the death of Mvakela who was the Cube *iNkosi* at that time, the chieftaincy was altered by Shaka's interference. It is said that, Shaka extended his overlordship by appointing his blood relative Zokufa over Duluzana who was the rightful heir to the throne. This event strengthened Shaka's relationship with the Cube people. This relationship was further strengthened when the Cube heir Sigananda at the age of ten, became a mat-carrier (*udibi*) in the last days of Shaka's army.⁸⁵ Shaka nominated Sigananda, as Zokufa's heir to the throne.⁸⁶ The assegais for Shaka's national army were manufactured and produced by the Cube people. On account of this connection that the Cube people had with the royal house, they remained undisturbed by Shaka's wars and were feared for their relationship with the royal house of KwaZulu. After 1824, with the arrival of a number of white traders in Zululand, the practice of ironsmithing which the Cube men were well known for died out. Most people were attracted to European lighter and cheaper hoes, and axes and knives that were harder and sharper. This was a big blow to the Cube's economy and impacted negatively on their blacksmiths who became less sought after.⁸⁷

The Cube *iNkosi* whose name has entered into history was Sigananda kaZokufa. During his reign, he became unpopular with the Zulu Royal house for his insistence on exercising strict control himself over Cube affairs. Early in Mpande's reign in the 1840s, Sigananda, fearing that his desire for autonomy would invite reprisals from the king's army, fled across the Thukela to stay briefly with Bhambatha's grandfather, named Jangeni, *iNkosi* of the amaZondi people.⁸⁸ In the Zulu civil war of 1856 Sigananda sought protection from the royal in-fighting, this time

⁸⁴ T.V. Bulpin, *Natal and the Zulu Country*, Books of Africa, 1966, p. 69.

⁸⁵ Stuart, *A History of the Zulu Rebellion 1906 and Dinuzulu arrest, trial and expatriation*, pp. 207-208.

⁸⁶ Testimony of Mpatshana, 23 October 1921, de Web, C, and Wright, J.B. *The James Stuart Archives Vol. II*, Pietermaritzburg, University of Natal Press, 1979, pp. 228-229.

⁸⁷ C.T. Binns, *The Last Zulu King: The life and death of Cetshwayo*, London, 1963, pp. 205-210.

⁸⁸ 'Testimony of Mtshapi, 1 April 1918', in C. de Webb and J.B. Wright, *The James Stuart Archives Vol. IV*, Pietermaritzburg, University of Natal Press, 1986, pp. 62-65.

appealing to Bhambatha's father, Mancinza for refuge. In 1871 Siganda was a policeman at the magistrate's office in Greytown. But it is not clear whether this was while he was under the care of Mancinza during his absence from Zululand. After fourteen years of absence he returned to his people in the iNkandla region and became the *iNkosi* of the Cube chiefdom. Siganda escaped to Natal during the 1856 Zulu Civil War between Mbuyazi and Cetshwayo. Homestead head Manyonyana ka Nsungulo remarked that Siganda 'did not want to fight in the wars for he regarded himself as an independent chief'⁸⁹ Although no proof can be found in the sources as to what happened in the chiefdom while he was away and who was *iNkosi* in his absence, Zokufa, Siganda's father, was still alive during this period and also at the time of the Anglo-Zulu war in 1879, but he was very old.

3.5 THE PERIOD 1879-1906

3.5.1 *The daily life of the Cube people*

The Cube chiefdom was one of the healthiest and most fertile places in Zululand. It had an abundance of firewood and it was favourable for stock raising.⁹⁰ In many respects the Cube chiefdom in the iNkandla district was an ideal place in which people could live peacefully. The daily life of the Cube people continued largely unaltered until an imbalance between population density, livestock and existing resources started to emerge from 1879, the period of the Anglo-Zulu Wars. An influx of the Usuthu faction with their livestock from northern Zululand migrated to southern Zululand, a 'Reserve Territory', for refuge.⁹¹ This influx was caused by Usuthu people from different chiefdoms in northern Zululand who were brought to southern Zululand after the Zulu Civil Wars and during the troubled times which started after Cetshwayo's restoration.

The long established mixed farming involving crop cultivation and hunting, for the Cube people persisted until the 1880s when their resource base began to erode because of population growth. The year 1887 saw the beginning of European colonial rule over the iNkandla area as Zululand was annexed as a British colony. Zululand was divided into six administrative districts, the iNkandla district being the largest. The Code of Laws and Regulations for Zululand was established and implemented. People felt that their traditional customs were threatened and their cultural lifestyle would be under pressure.⁹² This period marked a turning point in the Cube people's lifestyle, the beginning of change in their social formation, and anticipated loss of control and possession of their own land.

⁸⁹, 'Testimony of Manyonyana', 23 October 1921, de Web and Wright, *The James Stuart Archives Vol. II*, Pietermaritzburg, University of Natal Press, 1979, p. 228.

⁹⁰ Stuart, *A History of the Zulu Rebellion* 1906, p. 401.

⁹¹ J. Guy, *The Destruction of the Zulu Kingdom*, London, Longman Group Limited, 1979, pp. 70-78.

⁹² J. Laband and P. Thompson, 'The Reduction of Zululand 1879-1904', In: A. Duminy and B. Guest (ed.), *Natal and Zululand from the earliest times to 1910* (Pietermaritzburg: University of Natal Press, 1989), pp. 212-216.

In 1888 the Cube people had to pay taxes and rents to the colonial government. The rates were fourteen shillings per annum for each family hut. This tax was to be paid in cash or in grain and livestock at the current price at the nearest market. The people were banned from carrying and possessing firearms, and if a person wished to leave Zululand he had to be in possession of a pass that was signed by the magistrate. On that person's return the magistrate had to be informed.⁹³

3.5.2 Ecological Disasters (1895-1905)

After the 1879 Zulu Civil Wars, a variety of disasters, which affected the people of Natal and Zululand, had a direct effect on the Cube people's environment. The homestead economy became increasingly difficult to operate on traditional lines because it was radically weakened and changed by a series of ecological disasters that began in 1895 and persisted for twenty years. In 1895-6 a plague of red locusts occurred. In 1897 rinderpest, a contagious viral disease broke out among herds of cattle. Plagues of red locusts recurred in 1898 and in 1903-4, and in 1906 another plague laid the people's fields bare. Between 1895 and 1907 there were six years of serious drought. In 1904-5 the herds were infected again by a new and deadly tick-borne disease called East Coast Fever.⁹⁴ All these ecological disasters were accompanied by confusion and panic, which was followed by deterioration of living standards. The crisis the people were faced with was also increased by the rapid growth in population, which occurred between 1891 and 1904, which reflected the evident vulnerability of homestead production.⁹⁵ The Eighth Ad Interim Report of the Zululand's Lands Delimitation Commission dated 27 August 1904, revealed that, due to the influx of Usuthu people, the iNkandla district was one of the most densely populated portions of the Zululand area.⁹⁶

The destruction of large subsistence food sources of maize, sorghum and cattle led to widespread malnutrition and starvation in the Cube area, as well as other parts of Zululand. The ecological disasters were the most devastating blow of all that struck the already weakened agricultural people. This epidemic led to the weakening of the whole traditional system of people's farming. As a result many Africans in the locations abandoned their ploughs and returned to hoes and

⁹³ J. Laband, *Rope of Sand: The rise and fall of the Zulu kingdom in the nineteenth century*, Johannesburg: Jonathan Ball Publishers, 1995, p. 383.

⁹⁴ 1/KRK 3/1/2 KK 2021/1897, 16 October 1897, Rep. Mag. Kranskop, Condition of Natives 1897, Circ. SNA No. 14.

⁹⁵ J. Lambert, 'From independence to rebellion, African Society in crisis 1880-1910', In: Duminy and Guest (ed.), *Natal and Zululand from earliest times*, p. 386.

⁹⁶ Annexure by C.R. Saunders to the Final Report, 11 May 1900, 'Eighth Ad Interim Rep. Zululand's Lands Delimitation Commission 1902-1904', *Reports by The Joint Imperial and Colonial Commissioners*, Pietermaritzburg, Government Printers, 1905, p. 294.

picks. It is unfortunate that there is no written data or proof of the direct impact of these disasters on the Cube people and the estimated percentage of the number of herds that died to back up this assumption. Some of the local Cube people in the area of study have memories of what their great grandfathers/mothers told them about these disasters at that time. But they have limited knowledge of the specific years in which these events occurred.⁹⁷

3.5.3 *The economic, political and social value of cattle to the people*

Cattle were the necessary basis of all social contracts and ceremonies. The loss of approximately 80-85% of the herds of cattle in the rinderpest and the later outbreak of East Coast Fever in the country was a catastrophe for the people's economic wealth, politically and socially.⁹⁸ Economically, in those days, an African man's wealth and his social standing was determined by the number of cattle he owned. People without cattle or few cattle in their kraals were looked down upon and regarded as men of no status (*abafokazana*). Politically, as in other areas, a man's status and respect was generally determined by the number of cattle he had. Socially, people used cattle to pay *ilobolo* (bride price), a social practice that was an accepted norm for the people. People also used cattle to perform certain cultural rituals, which symbolised traditional forms of consciousness, which were not yet broken down at that time.⁹⁹ People lived on meat and *amasi* (sour milk) from the cattle. Cattle were also used for ploughing and cultivation of fields that were further away from the homesteads. This indicates how central cattle were to traditional society in the Cube area and the rest of Zululand at that time.

During this epidemic the colonisers adopted methods of inoculation as precautionary measures. People were suspicious of these measures as they thought that colonisers were trying to spread the disease within their chiefdoms. In fact they blamed the colonisers for these ecological disasters. The Eshowe magistrate, who encountered hostility to inoculation, confirmed the suspicious attitude people displayed.¹⁰⁰ In 1897 it was stated that almost all the cattle in Eshowe district were wiped out.¹⁰¹ In the Krantzkop district only 10% of the cattle in the area had survived by the end of 1897.¹⁰² In the data where this information was collected, the iNkandla district was not mentioned and very few people remembered anything about this period. Even

⁹⁷ Laband and Thompson, 'The Reduction of Zululand 1879-1904', In: Duminy and Guest (ed.), *Natal and Zululand from the earliest times to 1910*, pp. 222-224.

⁹⁸ Lambert, 'From independence to rebellion, African Society in crisis 1880-1910', In: Duminy and Guest (ed.), *Natal and Zululand from earliest times*, pp. 384-386.

⁹⁹ Laband and Thompson, 'The Reduction of Zululand 1879-1904', In: Duminy and Guest (ed.), *Natal and Zululand from the earliest times to 1910*, p. 223.

¹⁰⁰ 1/ESH3/1/4, Annual Rep. Mag. Eshowe, Blue Book Returns Natal 1897, p. 192.

¹⁰¹ Ibid.

¹⁰² 1/KRK3/1/2/KK2021/1897, Rep. Mag. Kranskop, Condition of Natives 1897, Circ.SNA No. 14, 16 October 1897.

those who remembered had limited memories of how it affected the Cube chiefdom. Nevertheless, it is highly unlikely that the iNkandla could have escaped this epidemic.¹⁰³

3.5.4 *The impact of ecological disasters on the people*

It is not known how the people must have felt at that time, but according to present oral evidence, Cube people blamed the natural ecological disasters on the arrival of the Europeans. We cannot tell what caused those disasters. The researcher was unable to get documented information on the causes of these ecological disasters. Some Cube people when they were interviewed believed that it might have been the ancestors who brought a curse over the country and its entire people. It was not clear whether the curse was thought to be due to certain rituals not being followed or performed. Other Cube people believed that a cleansing ceremony to unchain Sigananda from handcuffs because he died in jail, was needed.¹⁰⁴

The consequences of these disasters cannot be overestimated and the Cube people of the iNkandla area were by no means immune to these events. Traditional food such as grain, meat, and milk were in short supply, and the people were unable to turn to natural vegetation as a food source because it was destroyed, as was the fauna (game) by the rinderpest.¹⁰⁵ The core of this dissertation is about the people and their forest but the forest on its own cannot be the overall supplier of people's material needs and subsistence; it is there as a supplement to agricultural activities.

3.5.5 *Migrant Labour*

It was believed that migrant labour would boost the economy and enable people to survive the natural crisis and colonisation, which had occurred in the country. But in the longer term it undermined traditional chiefdoms and traditional homesteads. In 1903-4 the iNkandla magistrate calculated that there were 50% more women than men in his district. The overwhelming numbers of migrants were males over the age of 15 years. On average an estimated 10% of the outward passes granted in the Thukela valley went to young boys. Migrancy had a major impact on the Cube people's pattern of life. The relationship these people had with their families was deeply affected. The roles that men normally performed were taken over by women, like heading

¹⁰³ Ibid. Laband and Thompson, 'The Reduction of Zululand 1879-1904', In: Duminy and Guest (ed) *Natal and Zululand from the earliest to 1910*, p. 223.

¹⁰⁴ Interview, Mfohloza Shezi, the present iNkosi's blood relative, 30 September 1999. [This was his own assumption of the situation at that time. Most people had no memories of what happened then and how people reacted.]

¹⁰⁵ Laband and Thompson, 'The Reduction of Zululand 1879-1904,' In: Duminy and Guest (ed) *Natal and Zululand from the earliest to 1910*, p. 386-7.

the household, milking of cows where there were no boys left, driving and collecting cattle and many others. Women found themselves heavily burdened and the responsibility of food production fell heavily on them. According to oral evidence when most Cube men left for towns as migrants, some of their women too joined them as migrants. The present *iNkosi* Shezi of the Cube people stated that in those days most young girls in the chieftdom ran off to towns to lead a loose life.

Wilson and Mamphela in their book *Uprooting Poverty*, pointed out how the migrant labour system robbed rural areas of development through the creation of jobs in the urban areas. This led to those in the rural areas relying on from migrant labour income. For example, agriculture has been diminished into a subsistence monoculture, with poor veld management, which has resulted in overexploitation of natural resources.¹⁰⁶ This problem has been aggravated by the increasing population in the rural areas and has further increased the level of poverty. The growing reliance on migrant labour during the colonial period carried on through to the post-colonial period and remains a feature of the contemporary scene. The segregation initiated during the colonial period was maintained under successive governments, and the social implication is seen today, especially in places like iNkandla.

3.5.6 Political and Social change

The political and social changes that took place at that time were perpetuated by civil wars and external invasion. These changes caused serious damage to the material life of the Cube people; they were gradually losing political and social power, possession and control over their chieftdom.

The beginning of the colonial era in the iNkandla area brought with it many changes, which affected not only the natural environment, but also the lifestyle of the Cube people. One of these changes politically impacted on the position of *amakhosi* politically, for although they retained their traditional status, their authority was exercised on a different basis and was reduced. The *amakhosi* were regarded as deputies of the Governor and subject to his authority. They also received a cash pension in return for assuming responsibility for the law-abiding behavior of their people. In terms of the Natal Code of Native Law, which was extended to Zululand on its annexation in 1887, *amakhosi* retained jurisdiction in minor civil cases and less serious criminal ones, while benefiting from the fines and fees of their courts.¹⁰⁷ The growing legislative and tax demands by the colonial government made the position of many *amakhosi* untenable with their people. *Amakhosi* were less able to distribute and redistribute land, and the chieftainship system and indirect rule were never replaced but weakened.

¹⁰⁶ Wilson and Mamphela, *Uprooting Poverty*.

¹⁰⁷ Laband and Thompson, 'The Reduction of Zululand 1879-1904', In: Duminy and Guest (ed.) *Natal and Zululand from the earliest to 1910*, p. 223.

The people were banned from carrying and possessing firearms. If a person wished to leave Zululand he had to be in possession of a pass that was signed by the magistrate in the iNkandla area, and on his return the magistrate had to be informed.¹⁰⁸ The loss of political and social independence did not completely transform the manner in which cultural and traditional beliefs, norms and values were practiced. They were, by and large, still preserved and highly respected. Their traditional way of dressing and the way they produced food were only gradually transformed.

In August 1905, the cash-strapped colonial government passed a Poll Tax Bill as a basic source of revenue for the government. This Poll Tax was a final straw to the Cube people and the rest of the country, who were already discontented as a result of their setbacks. The decision of iNkosi Sigananda of the Cube people at that time to rebel against the poll-tax that was imposed on the people was surprising even to his own people. Sigananda's role in giving Bhambatha, the rebel, sanctuary left him concerned about his chiefdom's future. This was once a peaceful chiefdom and for the first time the Cube people found themselves caught up in a rebellious activity for which they were not prepared.

3.6. THE PERIOD 1906-1994

3.6.1 The life of the people and the declining number of homesteads in 1906-1910

It is not easy to explore in detail the situation these people found themselves in during the aftermath of the rebellion, nor their feelings and attitudes when they lost free access to their natural environment in 1912. Besides the lives of the Cube people and other rebels from the iNkandla area that were lost during the 1906 struggle, the people's free lifestyle changed drastically and they were disillusioned. The homestead economy was destroyed, herds of cattle were confiscated, fields were trampled and people's huts were burnt.¹⁰⁹

The period 1907 from the aftermath of the rebellion until the formation of the Union of South Africa in 1910 marked a turning point in the well-being of the Cube chiefdom. The people's social, political and economical background was in jeopardy.¹¹⁰ It is assumed that regardless of these colonial changes forced on the people, they continued to practise mixed farming and hunter-gathering activities (social activities) as part of their cultural identity. People continued the longstanding belief in ancestors, and the performance of rituals. Although Christianity was introduced, it did not entirely change people into abandoning their strong beliefs in traditional

¹⁰⁸ Laband, *Rope of Sand*, p. 383.

¹⁰⁸ Edwards, *A Plant Ecological Survey of the Thukela River Basin*, p. 55.

¹⁰⁹ Stuart, *A History of the Zulu Rebellion 1906*, p. 206.

¹¹⁰ S. Marks, *Reluctant Rebellion: The 1906-1908 Disturbances in Natal*, London, Clarendon Press, 1970, pp. 350-352.

customs. Colenbrander, who was the iNkandla district magistrate at that time, reported how 'families lived discontented lives and scattered all over the district.'¹¹¹

In 1908 the Cube people were given a chance to reconstitute themselves under Siganda's son who was approved as a chief by the colonial government. It was hoped that unlike his father he would be loyal to white rule.¹¹² In August 1908 and 1909 it was confirmed that the number of migrants from Natal and Zululand working in the Transvaal mines had increased. In August 1908 the number was 7507 and in September it was 7833. This reflected an increase of 326 migrants in one month.¹¹³ This information was confirmed by F.R. Moor who was the Minister of Native Affairs in Natal at that time.¹¹⁴ At the end of 1909 the Transvaal Minister for Native Affairs reported to the Johannesburg based president of the Chamber of Mines that the Zulus were increasingly taking more employment in mines than they had been in the past.¹¹⁵ While the Cube elders remained in declining homesteads their authority was manipulated by white civil servants and their future potential to restore economic viability was circumscribed by environmental and colonial constraints.

3.6.2 An account of the events that impacted on people's ecological change in 1910-1970

The following is a chronological account of events that was drawn from the Natal Archival Depot NAD in Pietermaritzburg. These events signify more ecological changes and law enforcement that had a direct impact on people. They also show some constraints and concerns that people encountered during this period. This information is based on the different reports and letters that were written to the iNkandla magistrate, mainly by the Chief Secretary of Native Affairs from Pretoria. Others were from the Acting Under-Secretary and the District Native Commissioner of the iNkandla region. Due to limited knowledge the local people interviewed have no memories of significant events. Therefore, this is the only information that is available for the period under discussion.

On June 1911 a hunting law was passed to regulate and conserve game as some of the species were being depleted.¹¹⁶ People were to get a hunting permit from the iNkandla magistrate with reference to certain classes of game that could be hunted during the prescribed season. In view of human domination of the natural environment we have an obligation and responsibility to all living species and to our descendants to perpetuate their existence. On 15 November 1913 *amakhosi* of the chiefdoms were requested to discourage the practice of *insangu* [dagga]

¹¹¹ 1/NKA 3/1/1, Letter Mag. Nkandla to Comm. Native Affairs, Eshowe, 14 Feb. 1907.

¹¹² Stuart, *A History of the Zulu Rebellion 1906*, pp. 209 and 356.

¹¹³ 1/NKA 3/1/1, Rep. Min. Native Affairs, Natal to Mag. Nkandla Circular. S.N.A. No. 51/1908, 10 October 1908; Marks, *Reluctant Rebellion*, p. 415; B. Carton 'Blood from your Sons', p. 309.

¹¹⁴ 1/NKA 3/1/1, Rep. Min. Native Affairs, Natal to Mag. Nkandla Circular. S.N.A. No. 52/1908, 10 October 1908.

¹¹⁵ Carton, 'Blood from your Sons', pp. 309-310.

¹¹⁶ 1/NKA 3/1/1, Rep. Mag. Nkandla to Comm. Native Affairs, 3 June 1911.

smoking to excess by adults. *Insangu* is a drug within the meaning of Section 37 Act No. 35 that was passed in 1896. Its sale constituted an offence against the law.¹¹⁷ The iNkandla region, on account of its terrain, was a conducive area to grow *insangu* plants and it was sold to other places like Durban, Johannesburg and Lesotho.¹¹⁸

In 1914, due to ecological disasters, people were encouraged to dip their cattle for protection and they had to pay a dipping levy. People were informed that the levy was to assist the government in training the tank assistants, buy the dip and erect more dips. But, due to lack of trust, people were reluctant, confused and in fear of what might happen to the few cattle left. In 1915 Nagana fever broke out in the iNkandla region and attacked cattle in localities where tsetse fly was not previously known to exist.¹¹⁹ In June 1916 the Chief Commissioner of Natal addressed magistrates in whose divisions were locations or Mission Reserves about conservation of forests in people's ('native') areas. The magistrates were to prevent the indiscriminate felling and cutting of indigenous trees that was going on. The government believed that a judicious exercise of these powers would check the natural resource denudation. In 1918 the people's important natural resource base was designated a national reserve and became subject to the management of the Union government of South Africa.¹²⁰ In the 1930s during the great depression, *amakhosi* of iNkandla magisterial division made an appeal to the Natal government to supply their people with maize as the drought had left their soil barren.¹²¹ In 1948 other natural resource areas in Natal and KwaZulu were also declared protected reserves.¹²²

In 1961 the black population ('natives') were prevented from growing wattle trees and sugarcane without a permit. A permit was only issued and accepted if an applicant wished to grow wattle for firewood and cane for stock feed.¹²³ In 1962 no people [*Bantus*] were allowed to reside on the Trust Farms. For example, Maduna Shezi of the Cube chiefdom was denied permission in September 1962, to reside on one of the Trust Farms next to the iNkandla district for better grazing and farming.¹²⁴ In 1965 people who moved from the chiefdoms in the iNkandla region to resettle on farms for migrancy reasons were discouraged from acknowledging *amakhosi*, as these farms fell out of the *iNkosi's* ward.¹²⁵

¹¹⁷ 1/NCP/8/4/5, Rep. Mags Nkandla, Natal Dept. Reports, SNA No. 2/1913, Reps. Mags Nkandla, Natal Dept. (1912-1913); 1/NKA Vol. 3/4/8/2, Reports Rep. Mag. Nkandla to Comm. Native Affairs, (Correspondence Letters).

¹¹⁸ Interview, Reggie Khumalo, Gladman Buthelezi and Edward Khanyile, eKuningeni, 30 September 1999.

¹¹⁹ Reports and letters, Nkandla District Native Commissioner to the Mag. Nkandla, 1914-1915; 1/NKA 3/4/8/5; 1/NKA 3/3/4/8/4, Letter Mag. Nkandla to Comm. Native Affairs, 12 Feb. 1914.

¹²⁰ Ibid.

¹²¹ Ibid.

¹²² Ibid.

¹²³ 1/NKA Vol. 3/3/4/1/2, Letter Cowan, Chief Native Comm. Natal to Mag. Nkandla, 1950.

¹²⁴ Letter Chief Bantu Affairs Comm. To Mag. Nkandla, 30 August 1962.

¹²⁵ 1/NKA Vol. 5/1/1, 1/NKA Vol. 3/4/8/8, Rep. Mag. Nkandla to Bantu Affairs Comm. Nkandla, July 1965.

3.6.3 The KwaZulu Government (ZG) in 1970-1994

After the creation of the KwaZulu Government in 1970, the Department of the Chief Minister M.G. Buthelezi, created the Bureau of Community Development to promote the development of the rural people of KwaZulu. Its main objective was to improve the quality of life of all people living in KwaZulu by ensuring that they lived in a healthy environment. The minister was also concerned about encouraging the dignity and self-esteem of the people of KwaZulu. During this period the conservation of natural resources of KwaZulu was given new impetus by the formation of a Bureau of Natural Resources in the 1980s under the direct control of Chief Minister Buthelezi. It was claimed that Buthelezi had established an international reputation as a conservationist and the Bureau was a significant step in view of the enormous environmental problems confronting KwaZulu.¹²⁶ In 1980 the minister established the KwaZulu Monuments Council. This statutory body was to promote the conservation of heritage sites for present and future generations. In 1994, it was given a new name, Amafa Heritage KwaZulu-Natal.

In the Tomlinson Commission Report (1980) it was reported that agriculture in KwaZulu was in a poor state. This problem was aggravated by poor farming methods that were created by overcrowding and overstocking by cattle.¹²⁷ There was constant ploughing of the shallow topsoil, which resulted in widespread soil erosion and environmental degradation. In 1980 that the Department of Agriculture and Forestry was formed to help rural women in KwaZulu implement correct standards in the production of food for consumption. This campaign was successful in most parts of the rural areas in KwaZulu. In the Cube area, vegetable gardens that resulted from this campaign were seen along the Insuze River. It indicated that the agricultural officers who were deployed to help rural women strive for the improvement of the general standard of living through nutritious food production did influence some of the Cube women. Due to limited infrastructure the Insuze vegetable gardens were unsuccessful in generating income.¹²⁸

In 1982 the KwaTeba recruiting office was established at iNkandla village and mining employment was normally on offer year-round. In its first year of operation in 1982, it recruited 512 miners. For the people to legalise their employment they had to do so via the Local Labour Bureau. The bureau figures in that year showed 72% were employed in the Transvaal and Orange Free State and only 21% were employed in Natal and Zululand.¹²⁹

¹²⁶ KwaZulu Government Diary, 1975-1980.

¹²⁷ KwaZulu Government Diary, 1980-1985 and 1985-1990.

¹²⁸ Interview, uMaShezi Mkhize, a woman in charge of the vegetable gardens, Insuze location, 28 November 1999.

¹²⁹ E. Ardington, *Poverty and Development in Rural Community in KwaZulu-Natal*, University of Natal, Durban, 1994, pp. 52-3.

3.7. THE PERIOD 1994 –2000

3.7.1 *The Cube people's Traditional Institution*

It is important to describe the present position of the traditional leader of the Cube people *iNkosi* Shezi, who is a descendant of Sigananda kaZokufa who gained fame after the Bhambatha rebellion in 1906. In KwaZulu-Natal after 1994 the *iNkosi* was a representative of his own chiefdom in the Regional Council. The Cube land is under the proprietorship of the Ingonyama Trust on behalf of the traditional communities and subject to the National Development program.¹³⁰ The *iNkosi* is responsible for communicating the needs and wants of his community to local government, either through personal representation or through committees he sets up. The Cube chiefdom in the iNkandla area after 1994 fell under what is known as a 'Remaining Area'. This is an area that has no primary government structure and so voters directly elect representatives onto the Regional Council through proportional representation.¹³¹ Officially, the *iNkosi* and his *izinduna* [headmen] administer the Cube chiefdom. All matters, whether administrative or judicial, are subject to their jurisdiction. The *iNkosi* alone can admit newcomers to the area and allocate land. There is no action that is taken without his approval and no approaches are made to the government other than through him.

3.7.2 *The Cube people as hunter-gatherers.*

Although the extent of hunting as an activity could not be fully gauged within the short study period, through discussions with game rangers it became evident that a history of hunting exists in the area. Some time back *inqina* [hunting parties] with dogs were common practices in the forest. This activity is still seen as a common phenomenon among the local people. When interviewing members of the Cube people some denied the occurrence of hunting while others, among them *iNkosi* Shezi of the Cube chiefdom, said it was a fairly common practice. Communal hunting is viewed as an important cultural event among the Cube people. In the past *inqina* hunted for fun/pleasure, subsistence and for ritual purposes. For example, people would hunt for *ihlambo*¹³² if the deceased was a man or an *iNkosi's* wife. After the period of mourning beer was prepared and all men in the neighbourhood set out to hunt. At the end of the hunt they all washed in a stream or river with strengthening medicine, and on their way home they sang

130 S. Cohen et al., 'Institutions in Nkandla and Environs', University of Natal, Pietermaritzburg, Centre for Environment and Development (CEAD), Nkandla Melting Pot-Group Report, 1999, pp. 15-35.

131 Ibid., Interview, Gladman Buthelezi and Edward Khanyile, KZNNCS-Eshowe, 20 August 1999; *iNkosi* Shezi, eDlabe, 30 August 1999.

132 *Ihlambo*, is a form of a ritual that is undertaken when an *iNkosi* or men of high standing in the chiefdom has passed away, a hunting party with hunting dogs will hunt for an animal that will be used to clean the spades. This is done a month after that person's burial.

anthems and praises of the deceased¹³³. Indigenous forest mammals are a very important source of protein for rural communities.¹³⁴

3.7.3 *The Cube People and their Agricultural Activities*

Most of the land in the Cube area is used for subsistence farming. The areas under cultivation are close to the field owner's kraal and situated on the most level ground available. However, the shortage of land suitable for ploughing and crop production (arable areas) is forcing farmers to cultivate in the steeper slopes thus causing erosion. The preferred position for a field is directly below the cattle kraal where plants receive an abundant supply of kraal manure through rainwater runoff. Unfortunately these areas are usually steep. Most people have stopped cultivating fields, because of low yields, which might be mistakenly attributed to drought rather than to poor soil fertility. Fertile areas, such as those close to the iNsuzi River, are situated further away from the people's households next to the forest. Such distant fields are difficult to protect from wild and domestic animals. Some older respondents felt that they were too old and tired and thought it no longer worth cultivating and chasing away bushpigs and other animals and birds. Although the Cube people grow a variety of crops, maize is by far the dominant crop in the area. Other crops are frequently intercropped with maize, with increased density in the fertile soil below the cattle kraal. Crop rotation and even grazing rotation with cattle is not practiced due to lack of agricultural officers to educate people about such practices.

In hoed fields the most common method of planting is to dig holes (spaced 45cm to 60cm apart), in which 2 or 3 seeds of maize (or beans) are dropped, as beans help nitrogenate the soil. Sometimes one can see soil erosion in a maize field. Pumpkins and sorghum are often intercropped with maize. Beans are grown alone in their own field. Some people do inter-crop it with maize if it is a small patch. It is common in the African culture that cultivation or ploughing is the duty of women, whereas weeding is performed by both men and women. Women normally work in their fields in the early hours of the morning, that is between five and ten o'clock. During harvesting they sometimes work from sunrise to sunset to finish a whole field. Even young children, prior to setting off for school, normally begin their day by working in the field first and then prepare themselves for school. This is done seasonally, be it harvesting or cultivating time.

For ploughing, people still use hoes and very few still own a plough and oxen. In the Cube area at eDlabe where the iNkosi Shezi's residence is situated, there is only one man who still owns a plough and oxen. He normally uses it for hire and this helps him generate income for subsistence because he is neither employed nor a pensioner. Due to poverty and reliance on pensioners'

¹³³ E.J. Krige, *The Social System of the Zulus*, Pietermaritzburg, Shuter and Shooter, 1974, p. 167.

¹³⁴ K.H. Redford, R. Godshalk, K. Asher, *What about wild animals? Wild animal species in community forestry in the tropics*. Rome, Food and Agricultural Organisation of the United Nations (1995), p. 96.

monthly incomes, people rely on their hoes rather than hiring oxen. A major problem in vegetable growing is damage by cattle, porcupines, goats, and birds, particularly as gardens are mostly situated far from the protection of huts on the hill crests. Some household women who stated that a reliable source of water was too far away were probably simply expressing the same problem of distance in a different way. Others held that even if vegetables were grown near the huts they were destroyed by chickens or pests, or failed for unknown reasons, possibly diseases. In general the knowledge of vegetable cultivation is limited. Oral evidence revealed that some vegetables were planted at the wrong time of the season, for example, non-hybrid cabbages in mid-summer, and the use of incorrect sowing methods.¹³⁵ It was discovered that due to limited agricultural knowledge, most people engaged in growing vegetable gardens were unaware of mulching techniques. As a result they created stressful conditions, for example, by watering very heavily one day and then leaving the garden dry for several days. Rural women are farmers but they do not have the agricultural support and know-how that is needed to cultivate the land effectively. As a result, yields are always uncertain and some people feel that money cannot be wasted on such a risky venture.¹³⁶ Cattle, goats and poultry are the main animals kept in the area of study. Livestock normally grazes on the steeper slopes between the cultivated fields and areas of uncleared bushveld.

3.7.4 Socio-economic conditions

Having discussed traditional institutions in the iNkandla study area it is imperative to look into the socio-economic conditions as a foundation in a developing community. The year 1994 marked a democratic revolution for mostly the black population of South Africa. But, has this democracy changed in the lives of the rural Cube people in the iNkandla district? In an underdeveloped and remote region like iNkandla infrastructural development and economic growth are the basic foundations for development. The area is still hampered by economic constraints, resulting in insufficient infrastructure, which in turn hampers economic development.

The main road from the Eshowe business centre to iNkandla village is a gravel road, which runs along the spine of the hill. It is precipitous on one side, very steep in parts and extraordinarily narrow on some blind corners. It is well maintained but often impassable after heavy rains. There are two buses a day, one from iNkandla to Eshowe and the other one from Eshowe to iNkandla. There is no fixed time at which these buses travel, thus making it difficult to commute to and

¹³⁵ Gladman Buthelezi, Ezemvelo KZN Wildlife officer, Eshowe, 30 August 1999.

¹³⁶ Interview, umaNtombela Shezi (wife of the present *iNkosi* of the Cube people) who is the representative of the 'iNsuzze Vegetable Garden Organisation' for the Cube women eDlabe, at iNkosi's residence, 1 October 1999; R.I. Cairns, 'Agricultural production in a rural community in KwaZulu', Master of Science Thesis, University of Natal, Pietermaritzburg, 1988, p. 78.

from work and sometimes impossible to complete business in time. In 1999 the Department of Transport took the initiative to tar only the main road. It was completed in 2000. In July 2001 Siganda's tombstone was unveiled with the help of Amafa Heritage KwaZulu-Natal and was declared a national monument.

Homesteads in the Cube chiefdom are comprised of extended families and most of them are built in a traditional homestead formation. They spread throughout the area and it is this isolation of households that further complicates the problem of bringing infrastructure to individuals. The rugged terrain of the area makes it difficult for the government to improve the infrastructure because of the high financial expense it would incur. There are sledges and donkeys, which are commonly used to carry goods and luggage for the people who stay far away from both the national road and other minor access roads. Many women still walk long distances to fetch water and fuelwood to meet their daily needs.

The Cube people have been subject neither to betterment schemes nor to artificial resettlements. There are limited opportunities for local employment because it is not possible to commute daily to any nearby centre of employment, that is, the Eshowe or iNkandla business areas. The majority of men between 20 and 60 years of age are migrants. The number of woman migrants over the age of 20 years is small.¹³⁷ Families are thus highly dependent on pensions and remittances from migrant workers.

3.8 CONCLUSION

This chapter has explored the history of the Cube people and has briefly investigated the present situation of the Cube in terms of their lifestyle. This brings us to the next chapter, which investigates and explores the relationship between the Cube people and their forest, as well as its natural resources. This investigation highlights the environmental impact that has occurred over the years due to human activities.

¹³⁷ E. Ardington, *Poverty and Development in rural community in KwaZulu-Natal*, University of Natal, Durban, Development Studies, 1995, p. 85.

CHAPTER FOUR

THE RELATIONSHIP BETWEEN THE PEOPLE AND THEIR FOREST

4.1 INTRODUCTION

The chapter investigates and explores the relationship between the Cube people and the iNkandla forest, its 'pocket forests' and other forest patches to understand the impact that the local people of the Cube chiefdom have had on the forest resources. It outlines the importance of the iNkandla forest as a protected nature reserve to the surrounding local communities.

4.2 THE CUBE PEOPLE'S VIEW OF THE FOREST

When the Cube people were in possession of a land that was fertile and suitable for their mixed farming, with abundant grazing for their stock and a forest (iNkandla) rich in fauna and flora. The forest fauna were exploited to supplement the people's diet. The forest also provided a variety of edible fruits as well as habitats for small animals, which were either hunted or trapped. People were in control of their land, labour and its products.

The Cube people view the iNkandla forest as their own property wherein they should be allowed to harvest and or utilise the resources as they like, to meet their basic needs. The forest holds a significant value for the Cube people in particular in the light of the relationship they have with it. There is a claim that from time immemorial the forest has been theirs, therefore the right of the local people to utilise it should be reserved. Through conversation with some of the Cube residents it was clear that the forest forms part of the Cube people's lifestyle, culture and tradition.

4.3 HOW DID THIS CHANGE WITH TIME?

There is evidence that the iNkandla forest once occupied a larger area than it does today. However, when discussing the former extent of the iNkandla forest there are three main factors that should be considered. These are climate, fire, and exploitation. In the past, climate and fire were seen as the most important determinants of forest extent. But, during the last few centuries fire and exploitation due to human activities have become the most significant factors causing a reduction in forest resources and environmental degradation of the iNkandla forest. For decades, forced settlement, increasing population size due to civil wars, ecological disasters that occurred in the twentieth century, and programmes initiated during the apartheid years, placed extreme strain on the iNkandla forest resources when also the local people turned to it for survival. The pressure put on these resources was as a result of over-utilisation and over exploitation by the local community, who in this case were predominantly from the Cube people and other locals from different chiefdoms surrounding the forest. In addition there was fire, which was and still is employed by the local communities to ensure a better quality of grazing grass for their livestock.

The relationship between the people and the iNkandla forest should not be underestimated since people use forest resources for many purposes some of which will be discussed shortly in this chapter. The Department of Nature Conservation, presently called the ‘Ezemvelo KZN Wildlife Society’, does recognise the fundamental relationship of people, resources and environment.¹³⁸

4.4 WHAT FORESTS DO FOR PEOPLE

4.4.1 The goods and services provided by the forest to sustain the people

It is evident that the economic value of the iNkandla forest to the Cube people and other local communities surrounding the forest amounts to a significant portion of the benefits to rural households. The following table illustrates the goods (things) and services (processes) provided by the iNkandla forest to sustain the local people.

Table 1: Value of goods and services that the iNkandla forest has for the local people

GOODS	SERVICES
Wood	<ul style="list-style-type: none"> • fuel (for cooking, ironsmithing) • building material/poles for fencing (homesteads, kraals and fields) • handicraft (wood craft)
Grass	<ul style="list-style-type: none"> • livestock, game and other animals for grazing • thatching roofs (some birds use grass for their nests) • handicraft (grass craft)
Water	<ul style="list-style-type: none"> • spring water from the forest to supply community animals (in rivers and streams) • supply fresh water to forest resources (both fauna and flora for growth)
Plants	<ul style="list-style-type: none"> • supply food to both fauna and flora (forest resources) • supply plants for medicinal purposes to local people, healers and medicinal plant collectors (for subsistence) • supply some edible fruits to both local people and (forest) animals
Game	<ul style="list-style-type: none"> • used as food supplement for local people • used for medicinal purposes by healers and herbalists • used for rituals
Ecology	<ul style="list-style-type: none"> • increases biodiversity , soil nutrients, humus, to bring more growth to forest natural resources • mitigates climate change; prevents soil erosion

¹³⁸ Anon, ‘Nkandla Forest Reserve and Surrounding areas management and development plan’, University of Natal, Pietermaritzburg, Centre for Environment and Development (CEAD), Nkandla Melting Pot- Resource Pack, 1999, p. 18.

The uses and dependence of the local community on various forest resources (as goods and services) are discussed below to make constructive recommendations for a mutually sustainable relationship between people and the forest through sustainable uses of forest resources.

4.4.2 *The forest as a refuge*

The iNkandla forest has always been of significant value to the Cube people. This was not only because the forest resources were always an integral part of their lives, but also because the forest provided a sanctuary to the leaders from Shaka to Bhambatha in time of war. The iNkandla forest was the homeland refuge of the Cube people and its chiefdom.¹³⁹ To mention but a few examples, Shaka, it is said, when hard pressed by Zwide, retreated into the iNkandla forest. Msholozha ka-Dlaba, who was the Cube *iNkosi* at that time, when his chiefdom was overrun by a roving Zulu raiding band, betook himself to sit in the iNkandla forest in comfortable security with his herds of cattle till the enemy passed by. At that time there was an increasing demand for ivory by European traders who also accelerated the demand for traded cattle. Chiefdoms attempted to supply the market by using their regiments for raiding.¹⁴⁰

An influx of the Usuthu faction with their livestock used the forest as a refuge. This created overcrowding which in turn caused changes and tensions, which developed between the Cube people and their natural resources. More pressure was placed by economic stress on the natural resources of the forest and the vegetation within the iNkandla area. King Cetshwayo was forced to seek sanctuary among the Cube people in the iNkandla forest in 1883 after the war that broke out between Zibhebhu and himself. In 1884 Usuthu supporters who actively resisted hut tax, mostly from the central territory of king Cetshwayo, fled to the iNkandla forest.

4.4.3 *The forest as a source of food (for hunter-gatherers)*

The forest biome is not only characterized by endemic trees and plants, but also by a number of animal species which are associated with and dependant on the forest for survival.¹⁴¹ The extent of utilisation of the forest resources for food could not be gauged during the short study period of data collection. Through conversation with the officer-in-charge (OIC), Edward Khanyile, it became evident that a history of hunting exists in the area, especially among the Cube people. In the past local people were engaged in hunting activity for various reasons. For example, people

¹³⁹ Stuart, *A History of the Zulu Rebellion 1906*, p. 206; Laband and Thompson, 'The Reduction of Zululand 1879-1904', In: A. Duminy and B. Guest (ed.), *Natal and Zululand from the earliest times to 1910*, pp. 393-397.

¹⁴⁰ M. Hall, *The Settlement Patterns in the Iron Age of Zululand: An Ecological Interpretation*, Cambridge Monographs in African Archaeology (BAR International Series 119, 1981), pp. 10.

¹⁴¹ Mcfarlane et al., 'Resources of the Nkandla Forest Reserve', pp. 23-25.

would hunt for rituals like *ihlambo*,¹⁴² medicinal purposes, for subsistence and fun. The present *iNkosi* Shezi of the Cube is a hunter and he did not deny his hunting activity in the forest.

Through conversations with the iNkandla forest game guards and forest rangers it was revealed that *inqina* with dogs was and is still a common practice mainly in the iNkandla ‘pocket forests’, where control is limited. It was also reported that *inqina* normally carries fire-arms with dogs of about thirty in number.¹⁴³ Some members of the local community denied the occurrence of hunting in the area while others said it was a fairly common practice among Cube people. Communal hunting is generally viewed as an important cultural event focused on areas where hunting is not controlled by game guards/rangers. Indigenous mammals are a very important source of protein for rural communities. In the iNkandla forest, hunting is illegal since the forest was declared a reserve. Anyone caught poaching is apprehended, arrested and taken either to the police or the local chiefdom authority.

The decrease in forested areas associated with an increase in forest use has led to escalating pressures on animal species. It was reported that 11 amphibians, 13 birds and 15 mammals of evergreen forests were classified as rare and endangered species in 1984. Such declines in species richness could potentially affect the ecosystem. Records of species richness and general composition are lacking for the iNkandla forest. In discussion with the officer-in-charge of the forest, local community members, some of whom are hunters, and from personal observations the following list of mammal species was compiled. This list should not be seen as definitive. Some means of determining species composition and numbers within the iNkandla forest is required (refer Table 2 below).

Table 2: Common mammal species commonly hunted within the iNkandla Forest.

Species Name	English Name	Zulu Name
<i>Papio ursinus</i>	Chacma baboon	<i>imfene</i>
<i>Cercopithecus mitis labiatus</i>	Vervet monkey	<i>inkawu</i>
<i>Hysrix africae australis</i>	Porcupine	<i>ingungumbane</i>
<i>Potamochoerus porcus</i>	Bushpig	<i>ingulube yehlathi</i>
<i>Genetta tigrina</i>	Large spotted genet	<i>umhlanga</i>
<i>Cephalophus monticola</i>	Blue duiker	<i>iphithi</i>
<i>Tragalephus scriptus</i>	Bushbuck	<i>unkonka/imbabala</i>
<i>Sylvicapra grimmia</i>	Common/grey duiker	<i>impunzi</i>

Source: Nkandla Melting Pot 1999, Group Report.¹⁴⁴

¹⁴² *Ihlambo* is a form of a ritual that is undertaken when an *iNkosi* or men of high standing in the chiefdom has passed away, a hunting party with hunting dogs will hunt for an animal that will be used to clean the spades. This is done after a month of that person’s burial.

¹⁴³ Interview, game guards (Thulani, Mthokozisi and Lindani), Edward Khanyile, Gladman Buthelezi and *iNkosi* Shezi of the Cube chiefdom, iNkandla forest camp, 5-6 August 1999.

¹⁴⁴ Mcfarlane et al., ‘Resources of the Nkandla Forest Reserve’, p. 31.

All the above animal species are part of the forest resources that are in demand and this is what this forest is worth. It is the only closed mistbelt forest in the country in which the Broadbill bird occurs. It is also a home to the rare Delegourge's pigeon. The Bush Blackcap is another uncommon forest bird and the iNkandla forest is the only place in Zululand where it can be found.¹⁴⁵

For the first time in over a hundred years the historical tradition of the Zulu King's ceremonial hunt has been revived in northern KwaZulu-Natal. On the 30 June 2001 and 01 July 2001, King Goodwill Zwelithini led hundreds of dignitaries and guests in a hunt for a variety of buck including, iNyala, Kudu, Reedbuck and Wildebeest on a private game farm in the Hluhluwe area. In times of King Shaka this ceremonial hunt took place between the Black and White Umfolozi, now the site of the Hluhluwe/Umfolozi Game Reserve. During the hunt King Zwelithini gave the go-ahead to the people to harvest excess game in a controlled manner. Hunters who attended were exposed to, and taught, judicious hunting methods and the King had the opportunity to evaluate his subjects' abilities and qualities. The King was took the role of an educator and keeper of the nation's customs and culture. In the same manner of yesteryear the King spoke to his people about the importance of sustainable conservation and prior to the hunt he publicly bought his hunting permit license. This time the spears were changed for rifles and animals hunted were paid for.¹⁴⁶ Apart from hunting, other food sources are various edible fruit trees in the forest but there is not much evidence that shows that local people harvest these fruits.

4.4.4 The forest as a source of raw material

The plant material harvested in the iNkandla forest was and is still mostly used as fuelwood, poles for fencing, building material and wood for handicrafts. In South Africa high volumes of plant material are used annually, and about 51% of domestic energy use in South Africa is gathered from the forest.¹⁴⁷ Another form of relationship that the iNkandla forest had with the people, concerned the demand for larger quantities of smelted iron caused by the demands for Shaka's warriors, and a greater number of agricultural implements. All the production of iron from iron ore demanded considerable quantities of timber from the iNkandla forest. This activity might have had a considerable effect on the forest, especially on mature woodlands providing timber suitable for smelting. Iron products were in increasing demand as an important component of Shaka's weapons during the building of the Zulu nation. Iron working can be expected to have had a considerable effect on the biota of the iNkandla forest. During the study it

¹⁴⁵ Interview, L. Chittenden a local fauna and flora expert, and Edward Khanyile, Eshowe KZNNCS 4 and 5 August 1999; Mcfarlane et al., 'Resources of the Nkandla Forest Reserve', p. 30.

¹⁴⁶ Official Newsletter of the KwaZulu-Natal Tourism Authority 'Wozani', *Kingdom of the KwaZulu*, South Africa, August 2001, p. 3.

¹⁴⁷ C.A. Liengme, 'A study of wood use for fuel and building in the area of Gazankulu', 1983, *Bothalia* 13, pp. 501-508.

has been observed that there is still a high reliance of local people on natural forest resources for fuel, building material and craft.

4.4.5 Fuelwood

Fuelwood harvesters generally start by collecting all available wood on the forest floor before they proceed to breaking dead branches off live trees. When all available dead wood has been collected, local people turn to cutting down live trees or branches.¹⁴⁸ In this scenario, neat piles of cut wood are usually stored on the edge of the forest where they are left to dry before collection, either by a sledge drawn by donkeys or carried on the head by women.¹⁴⁹ Fuelwood harvesters generally prefer hardwoods because they produce little smoke, for example, Bruinsap blaar (*uphongaphonga*), White ironwood (*umzane*) and Real yellow wood (*umsonti*) species.¹⁵⁰ At present harvesting firewood is restricted in the iNkandla forest. A permit is required to ensure that certain species are not harvested while the use of other species is maintained and controlled at acceptable levels. Most harvesting of fuelwood is focused on the 'pocket forests'. Other tree species, commonly harvested that occur in the iNkandla Forest are: Real yellow wood (*umsonti*), Ironwood (*umsishane*), White pear (*umdakane*) and Assegai tree (*umlahleni*).¹⁵¹

4.4.6 Building Material

The iNkandla forest is an important source of poles and laths for building purposes for the local community in the Cube and surrounding areas. When building a house the people construct walls with a combination of poles, rocks and mud, while the roof consists of a thatched framework made of poles and laths. Poles are also used to construct the cattle kraals and fences around homesteads and fields. For building materials tree species which are durable and termite resistant are favoured and often used. For example, Coffee-bean strychnos (*umqalothi*), Water drypetes (*umkhushwane*) and Cape plane (*umbhovane*) are common species used for poles. Lianas such as Dwaba-berry (*idwaba*) and Small cluster-pear (*umaluzwenda-omnyama*) are also collected. Harvesting poles for building involves cutting down saplings of between 8 and 13 cm in diameter.

¹⁴⁸ M.A. Du Plessis, 'The effects of fuelwood removal on the diversity of some cavity using birds and mammals in South Africa', *Biological Conservation* 74, pp. 77-82.

¹⁴⁹ C.M Shackleton, 'Fuel harvesting and sustainable utilisation in a communal grazing land and protected area of the eastern Transvaal Lowveld', 1983, *Biological Conservation* 63, pp. 247-254.

¹⁵⁰ A.B. Laws and A.G. Rebelo (eds.), *Vegetation of South Africa, Lesotho and Swaziland*, Department of Environmental Affairs and Tourism, 1996, Pretoria.

¹⁵¹ *Ibid.*, p. 25.

Although the present permit system that exists allows the local community to make use of forest resources within the iNkandla forest, harvesting of these species is mainly focused on ‘pocket forests’ and other patches which are not monitored and controlled. The OIC also confirmed that a degree of uncontrolled harvesting does also occur in the forest reserve (main forest). It was apparent that local people usually come into the iNkandla forest along the main road and harvest wood silently with their bow saws. The wood is then stacked in piles for later collection using either a sledge or carried by head. According to the OIC Khanyile, piles from four to six feet have been recorded in these areas. The following table (3) illustrates tree species commonly harvested in the iNkandla forest for building material and fuel.

Table 3: Plants/tree species commonly used for fuelwood, building material, fencing posts, and sticks.

Species Name	English Name	Zulu Name	Plant/Tree Use
<i>Dichrostachys cinerea</i>	Sickle Bush	<i>ugagane</i>	-wood excellent for fence poles and firewood
<i>Strychnos decussata</i>	Buffalo-thorn	<i>umlahlankosi</i>	-poles for hut building and sticks
<i>Sychnos hemengsii</i>	Red bitterberry	<i>umqalothi</i>	-poles for fences, hut building or making sticks
<i>Ochna arborea</i>	Cape plane	<i>umthelelo</i>	-for fence posts
<i>Ficus natalensis</i>	Natal fig	<i>Uluzi trees</i>	-sticks from Uluzi trees were used by Cube skilled blacksmiths to light the great fires to melt the metal from the ore.

Source: Nkandla Melting Pot 1999, Group Report.¹⁵²

4.4.7 Handicraft

The iNkandla forest also provides hardwoods which are favoured for a variety of handicrafts and household items such as sticks (the ones that are carried by *amakhosi* and other men of high status) bracelets, grinding mortars, spoons, pipes and bowls. Although most of the hand made items like sticks, platters and bowls are sold in urban areas like Durban by a few individuals, some items are made for household use. The most common forest species that are harvested for handicraft are Cape plane (*umbhovane*), Natal plane (*umbhovane-ongcingci*), Hairy drypetes (*umhlwakela*) and Coffee-bean *strychnos* (*umqalothi*). But it has been revealed that the amount harvested for this activity is low in comparison to other uses. Handicraft is no longer common and famous in the Cube chiefdom, unlike in the past where the handicraft industry made the Cube people a famous chiefdom in the whole of Zululand. Today they manufacture craft for their

¹⁵² Ibid., pp. 24-25.

own domestic use. For example, baskets are made up of a number of different forest raw materials: Dwaba-berry (*idwaba*) is used for the basket ribs.¹⁵³ Of these harvested plant resources, the Dwaba-berry (*idwaba*), according to oral evidence, still exists in the iNkandla Forest. But the presence of the other two mentioned species could not be confirmed.¹⁵⁴ The traditional grass mats are still very popular in the area of study, being used for sitting on, sleeping on and as wedding gifts. The following table (4) illustrates the commonly harvested plant species for handicraft as well as, interior decoration:

Table 4: Grass species from the forest used for handicraft.

Species Scientific Name	English Name	Zulu Name	Plant/Tree Use
<i>Typha capensis</i>	Bullrush	<i>ibhuma</i>	-grass for mats
<i>Phragmites australis</i>	Common reed	<i>Umhlanga/indumo</i>	-reed for decorating interior of huts
<i>Phoenix reclinata</i>	Wild date palm	<i>Isundu/idama</i>	-making brooms
<i>Cyperus latifolius</i>	Giant sedge	<i>ikhwani</i>	-grass for mats
<i>Pergularia daemia</i>	Trellis vine	<i>intungwa</i>	-grass for basketry

Source: Nkandla Melting Pot 1999, Group Report.¹⁵⁵

The harvesting of plant and grass species has an effect on the forest and the sustainability of these practices depends on the extent and severity of these impacts. These plant species have been historically important in supplying the basic needs of the Cube people and other communities in the surrounding area. At present very little is known about the quantity of raw material species within the iNkandla forest and the potential for harvesting of this nature.

4.4.8 The forest as a source of medicinal plants

The iNkandla forest is of major importance to the local people of the Cube chiefdom. It provides a multitude of medicinal remedies ensuring the perpetuity of traditional customs. The plant species which occur in the iNkandla forest have been historically important in supplying medicines to the local traditional healers, medicinal plant collectors and to those who have knowledge of using herbs without necessarily being healers. The harvesting of the medicinal plant species has an effect on the forest resources. The sustainability of these practices and activities depends on the extent and severity of these impacts on the environment.

¹⁵³ Mcfarlane et al., 'Resources of the Nkandla Forest Reserve', p. 24.

¹⁵⁴ Interview, R. Scot-Shaw a tree expert, Eshowe KZNNCS, 5 August 1999.

¹⁵⁵ Mcfarlane et al., 'Resources of the Nkandla Forest Reserve', pp. 20-23.



Plate 4: Unsustainable bark stripping in the iNkandla forest (for medicinal purpose)



Plate 5: Bark removal from trees in the iNkandla forest (for medicinal purposes)

It has been reported that over seven hundred species used for indigenous medicines are actively traded in South Africa, the most valued of which come from indigenous forests.¹⁵⁶ According to Mander, some 1519 tonnes of medicinal plant material are traded each year in the Durban area, while 4339 tonnes and 19500 tonnes are traded in KwaZulu-Natal (KZN) and over the whole of South Africa respectively. He further states that 49% of the medicinal plant species that are traded by plant gatherers in Durban are forest species. These demands for medicinal plants have a huge impact on the forest resources, be it iNkandla forest or any other forest in KZN or South Africa. Understanding these medicinal plant market pressures is important in bringing local usage of the forest into perspective.¹⁵⁷

Bark removed from the trees is the most common plant part used for medicinal purposes (see Plate 4 and 5, p. 52). This is the type of harvesting that if it is done incorrectly, may lead to the death of the tree. The current policy is that anyone who has a permit can harvest the bark within the forest. Permission can be obtained from the local *iNkosi* and/or from the office of the *Ezemvelo* KZN Wildlife. When one has been issued with a permit, a forest ranger or guard accompanies the individual and assists in locating and removing a stipulated amount of bark from the desired species. The stipulated amount of bark to be harvested by each individual is usually limited to one or two hand sized pieces from any particular tree.¹⁵⁸

Through conversation with the nature conservation authority and a number of local people in the Cube chiefdom, a provisional list of tree species that are commonly used for medicinal purposes was drawn up. There was no data available to indicate the extent of utilisation of different plant species. It is also believed that, if monitoring programmes could be established and implemented by both the nature conservation authority (*Ezemvelo* KZN Wildlife) and the local community, it would be possible to gauge the level of medicinal plant use in the iNkandla forest and to list those species that are threatened due to overuse.

The ever-increasing demand for medicinal products for subsistence and by the local *izinyangas* [healers and herbalists] who still practise their profession using medicinal plants has serious implications for forest resource use. In conversations with the nursing sister-in-charge of eSibhudeneni clinic and the Superintendent of iNkandla hospital,¹⁵⁹ it was confirmed that most local people in the area believe in the efficacy of medicinal herbs. They visit mostly herbalists

¹⁵⁶ A.B. Cunningham, 'Development of a conservation policy on commercially exploited medicinal plants: A case study from Southern Africa', *Conservation of medicinal plants*, 1999, Cambridge, pp. 337-358.; M. Mander, *Marketing of indigenous medicinal plants in South Africa: A case study in KwaZulu-Natal*, Food and Agriculture Organisation of the United Nations, 1998, Rome, pp. 34-39.

¹⁵⁷ Mander, *Marketing of indigenous medicinal plants in South Africa*, pp. 34-39.

¹⁵⁸ Interview, forest rangers, Edward Khanyile OIC, Gladman Buthelezi, iNkandla forest main camp, 5 August 1999.

¹⁵⁹ Interview, Sr Nomusa Shezi, eSibhudeneni Clinic and Dr. D. Buthelezi, Superintendent of iNkandla Hospital, 20 November, 1999.

and healers for their illnesses. They only visit the clinic and hospital as a last resort, that is, when all else fails.

The OIC of the iNkandla forest together with forest rangers and conservation officers have compiled a list of medicinal plant collectors who they have apprehended, many with large bags of bark way beyond the amount required for own their use. Most of these collectors are people from outside the local community whose only interest is to sell the products. It is reported that some of these medicinal plant species are sold at a very high price. Such financial incentives encourage and motivate people locally or outside the community area to harvest the forest resources illegally. The OIC revealed that to date there are several forest medicinal plant species that have become extinct due to over utilisation, especially outside the protected ‘pocket forests’. These medicinal species are; Pepper-bark tree (*isibhaha*) and Black stinkwood (*unukani*).

According to the OIC most harvesting of forest resources in areas like the ‘pocket forests’ and other forests patches usually takes place near forest margins, although some collectors venture deep into the forest to locate bark and other items required for medicinal purposes. Some impacts are also concentrated along the network of paths because they provide easy access to the forest interior for the collectors without their being seen by any of the forest rangers who are on patrol. In the iNkandla forest the OIC and conservation authorities indicated a drastic increase in forest use where the fence was damaged or did not exist at all. The iNkandla Forest and its pocket forests yield important plants and rare timbers. The following table illustrates common medicinal plants that occur in the forest. These are the kind of medicinal plants that attract collectors who use these plants for subsistence (refer Table 5 below).

Table 5: Some of the common medicinal treatment species in the iNkandla forest

Species Scientific Name	English Name	Zulu Name	Medicinal Treatment
<i>Lippia javanica</i>	Lemon Bush	- <i>umsuzwana</i>	for flu and headaches
<i>Ekebergia capensis</i>	Cape Ash	- <i>umnyamathi</i>	for skin problems (pimples)
a) <i>Tetradenia riparia</i> b) <i>Dombeya rotundilia</i>	a) Mist Plume Bush, and b) Common Wild Pear	- <i>iboza</i> (<i>uzifozonke</i>) - <i>inhliziyonkulu</i>	for all types of illnesses, hypertension
<i>Bersama swinnyi</i>	Coastal White Ash	- <i>umhlakaza</i>	to win cases of all types
<i>Strychnos spinosa</i>	Spiny Monkey Orange	- <i>umhlala</i>	for snake bites

Source: Nkandla Melting Pot 1999, Group Report.¹⁶⁰

Some areas of the forest like the 'pocket forest' are still subject to illegal exploitation, particularly for the bark of species such as: Cape beech (*isicalabi*), White cherrywood (*inqayilibomvu*), Glossy bersama (undiyaza), Red stinkwood (*udumezulu*), Cheesewood (umkhwenkwe), Common saffron (*isinama*).

4.4.9 The forest, the people and their cattle

Local people allow their livestock to graze right up to the forest margin. This happens especially during winter when the grass is scarce and dry. Sometimes it happens when burning by locals decreases the availability of grass in the communal areas. At the iNkandla forest no attempt has been currently made to remove or at least limit the number of cattle entering the forest reserve. This not only opens up the understorey, which could severely affect the forest microclimate, but also brings about major changes in the forest margin. The impact of cattle on the forest is largely responsible for the destruction of the ecotone around the forest area. The construction of a fence around iNkandla forest is seen as the primary solution to this problem as it will prevent cattle from entering the forest. It is important that the iNkandla forest integrity is maintained. Therefore, protection of the forest resources should form an imperative part of forest management

4.5 EFFECTS ON THE FOREST ECOSYSTEM OF HARVESTING NATURAL PRODUCTS

Although it is claimed that harvesting of especially fuelwood is directed at dead trees the whole activity of the collection of fuelwood, building material, medicinal plants and wood for crafts could have serious consequences on the survival of nesting mammals and birds in the forest. Furthermore, the disruption of nutrient cycling through the removal of dead trees, bark for medicine and branches for fuel may also have a detrimental effect on the forest ecosystem.¹⁶¹ The collection of poles for building materials is concentrated not only on a certain tree species but also on specific height classes. This can be detrimental to the growth of the forest resources

¹⁶⁰ D. Mcfarlane et al., 'Resources of the Nkandla Forest Reserve: An investigation concerning the current status, management and use by the local communities of the forest', University of Natal, Pietermaritzburg, Centre for Environment and Development (CEAD), Nkandla Melting Pot- Group Report, 1999, p. 30.

¹⁶¹ P.T. Manders, *Management recommendations for the sustained use of indigenous forests*, Foundation for research and development, occasional report No. 35 (1988), Ecosystems Programmes, Pretoria, pp. 45-53; Du Plessis, *The effects of fuelwood removal on the diversity of some cavity-using birds and mammals in South Africa*, 1998, *Biological Conservation* 74, pp. 77-82; S.C. Kruger and M.J Lawes, *Edge effects at an induce forest grassland boundary: Forest birds in Ongoye forest reserve*, KwaZulu-Natal, 1998, *South African Journal of Zoology*, 32 (3), pp. 82-91.

and its ecosystem. Selective harvesting not only affects the species composition of the forest but also the general forest structure. Forests contain more ecosystems, species and genetic material than any other biome.¹⁶² There is a need for controlled and selective harvesting in these areas that could add the required value to the forest. This could foster a spirit of conservation rather than exploitation among the surrounding communities and encourage people to make use of woodlots as an alternative fuel source.

4.6 ENVIRONMENTAL BENEFITS OF THE FOREST

Forests contribute to environmental stability with benefits for both wildlife and people. They stabilise soil and hydrological systems playing an important role in maintaining marine and freshwater fisheries, agricultural productivity and domestic water supply. Forests also help to regulate local and global climate, the latter through capturing and storing atmospheric carbon dioxide and thus slowing the effects of global warming. The degradation of forests can create serious environmental problems, such as soil erosion, flooding, droughts, loss of fish species and climate change.

4.7 SOCIAL BENEFITS OF THE FOREST

Forests and humans have long existed in a complex interdependency. Everyone has a stake in forests, but the degree of dependence varies. The loss of a particular forest could spell the end of a whole indigenous culture. The people of the Cube chiefdom could all suffer emotional and practical losses if the iNkandla forests in their area decline drastically. Therefore, one important role for forest quality planning is ensuring that a variety of human needs are met within the forest landscape alongside those of wildlife and the environment.

4.8 EMPOWERING PEOPLE: THE FOREST, THE PEOPLE AND THE LAW

What does South African legislation say about the sustainable harvesting of forests?

According to the National Environmental Management Act 107, 1998 (NEMA), environmental management 'must place people and their needs at the forefront of its concern and serve their physical, psychological, development, cultural and social interests equitably'.¹⁶³ The Forest Act 122 of 1984 Part IV deals with the protection of biota and ecosystems. The purpose of this Act is to preserve the scenic beauty and natural scenic attraction, prevent soil erosion, maintain the natural diversity of species, preserve tree dominated biota, and promote the conservation and development of natural resources.¹⁶⁴ In 1996 the Ministry of Water Affairs and Forestry

¹⁶² Forest Quality: 'Environmental Benefits, An Introductory Booklet', IUCN The WWF International, Bristol United Kingdom, Dovernton Press, 1999.

¹⁶³ National Environmental Management Act No. 107 of 1998 (NEMA).

¹⁶⁴ Ibid.

(DWAF) recognised that forests were being overexploited by the inhabitants surrounding them. A new National Forest Law Act, No. 84, 1998 was formulated which provided for the reform of the law. The new Act's provisions amongst many, was to manage effectively and protect forests while maintaining sustainable forest resource utilisation.¹⁶⁵ The following are some of the core purposes of the Act on forest management as laid out by the government.

- promote the sustainable management and development of forests for the benefit of all,
- promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes.

Section seven (7) of the Act prohibits the destruction without a license of indigenous trees in any natural forest.

The Agricultural Resources Act of 1983 is also potentially useful in the conservation of plants in that it allows the Minister of Agriculture to prescribe mandatory control measures for the utilisation and protection of vegetation. Natural forest reserves are state forests set aside for the preservation of a particular natural forest, targeting plants and animals that live in it. As a wilderness area for the preservation of an ecosystem or scenic beauty, the Forest Act provides that no person may in either of these areas collect, take, disturb or destroy or remove any forest produce without permission and guidance.

4.9 CONCLUSION

This chapter has shown how people have utilised the forest resources. The utilisation of the forest species that occurred over time forms part of the relationship the Cube people and the surrounding communities have with the forest. The rich heritage that exists in the iNkandla forest is a potential drawcard which, if it is incorporated into hiking trails, could add an important cultural side to the wilderness experience. With the appropriate knowledge, skills and support the local community could play a role in such potential ventures.

¹⁶⁵ Ibid.

CHAPTER FIVE: RECOMMENDATIONS

SUSTAINING THE RELATIONSHIP BETWEEN THE PEOPLE AND THEIR FOREST

5.1 INTRODUCTION

The previous chapter has shown the kind of pressures that were exerted on the iNkandla forest resources by human activities. To combat this impact policies and laws to protect the forest have been enforced which habitually excluded people from the so-called ‘protected’ areas. However this attitude has been revised so that the focus is now on implementing new management strategies that involve local people. There is a need for new ways and means to promote and develop amongst people an interest in forest resources and biodiversity conservation. This should be done so that people not only accept forest and biodiversity conservation but also make it their own goal and desire.

There is a general recognition that rural poverty contributes to environmental degradation in South Africa. Given the current situation of the iNkandla forest resources, as well as the material needs of the rural Cube people and their social constraints, it is envisaged that the following recommended ideas and approaches put forward by the researcher could be appropriate for resolving environmental and social problems regarding forest resource use within the area of study.

5.2 TWO ALTERNATIVES

5.2.1 Protecting forest resources from people

The conservation authorities have been running the protected areas in an authoritarian way. This excluded rural people from living in and gaining a livelihood from the areas surrounding the forest. The strategy that is used even today by nature conservation authorities is that there should be:

- no exploitation of natural resources within the ‘protected’ areas.
- ‘protected’ areas which are administered by the State authority

In the previous chapters it has been shown that many centuries ago in the iNkandla study area the inhabitants had practiced natural resource management on their own with little concern about the principles of sustainable resource conservation. Due to lack of documented evidence of change and scanty evidence of the human pressures exerted on the forest and its resources over time, it could be speculated that the people had no option because their survival at that time depended upon direct access to natural resources. Traditional ecological resource management was practiced. Nevertheless, one wonders if the people have maintained that knowledge, awareness and understanding of natural resource conservation. One cannot dispute the fact that there has

been a breakdown of traditional resource management and a loss of authority to enforce regulations governing sustainable uses of resources.

5.2.2 *Protecting forest resources for People*

The livelihoods of the majority of rural people in African dry lands depend on the forest and woodlands as sources of agricultural land, firewood, timber for building material, and non timber tree products such as food, fibre and medicines. As the ecological balance in arid and semi-arid environments is delicate, sustainable forest resource use is required if rural people's basic needs for the future are to be fulfilled. Therefore, sustainable utilisation of forests, natural resources and putting people first in the conservation of these resources is an integral part of this dissertation. Institutional involvement in nature conservation and resource management within the forest should be considered, as the two concepts are mutually inclusive in this scenario. Besides, understanding conservation and how best natural resources should be used can help address this issue. The core focus is on the people's way of utilising the forest resources, the degree of their involvement in the management of these natural resources and how the conservation authority *Ezemvelo*, KZN Wildlife will address these issues.

5.3 CHALLENGES FOR THE FUTURE

Although there is not much development in the Cube area because of its rugged terrain, pressures that are being placed on forest resources are an ongoing problem which is impacting on natural resources and biodiversity. There is frequent and constant use of forest resources in an unsustainable manner. Such challenges call for new management approaches.

One of the conservation staff¹⁶⁶ from '*Ezemvelo*, KZN Wildlife', stated that the government lacks sufficient financial support and organisational capacity to fulfil their core functions. He also elaborated to the researcher how hard this hits nature conservation and environmental protection of the areas that are 'protected', like iNkandla and many others in South Africa. As a result the lack of management capacity is significant and this situation prevails in the iNkandla forest. There is more frequent uncontrolled use, harvesting and over exploitation of the forest resources which, according to Gladman¹⁶⁷, is beyond their control given the financial situation they are faced with as nature conservation authorities. These are challenges that can only be met if the local community adjacent to the forest and its surrounds have access to environmental education, management skills and are engaged in meaningful responsibilities in forest conservation measures. Enhancement of local capacity is a requirement to be considered by nature conservation authorities if the natural resources of iNkandla forest are to be sustained.

¹⁶⁶ Interview, Gladman Buthelezi, *Ezemvelo*, KZN Wildlife Society, Eshowe, 16 August 1999.

¹⁶⁷ Ibid.

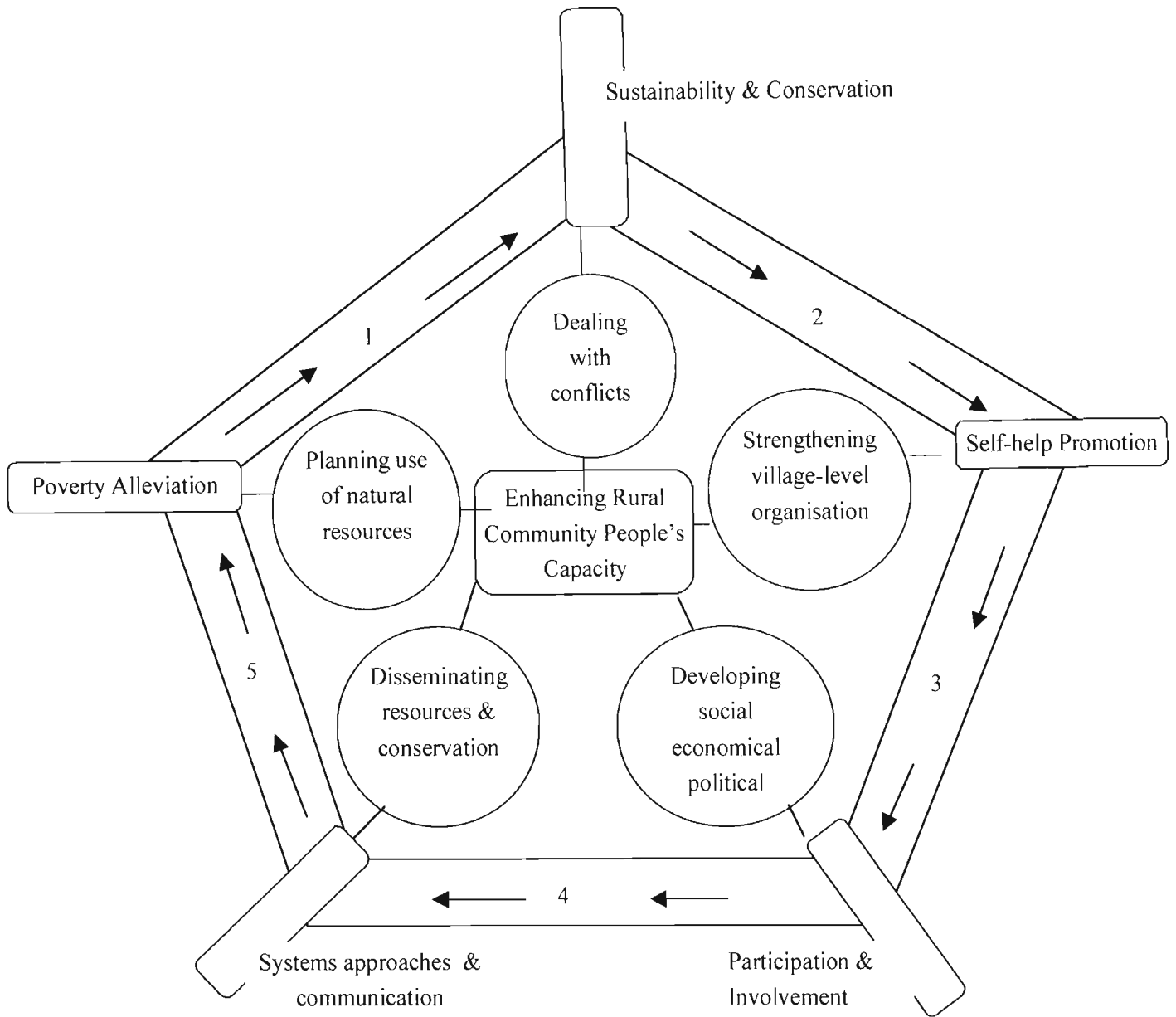
To enhance the capacity of the people in the local community and the understanding of sustainable use of forest and nature conservation, it is an essential challenge to first develop among locals an interest in forest, nature and biodiversity conservation. But, the locals should set their own conservation goals to achieve. This could enhance local people's capacity through active participation in sustainable development and management of forest and nature conservation. This approach might help strengthen the capacities of the rural people around areas called 'protected'. A sustainable development project, with such activities may be a challenge to establish and implement around the area. This can help modify and generate livelihood¹⁶⁸ opportunities to alleviate poverty.

Forest degradation is an unintentional consequence of the local people's gathering of too much useful resources from the forest. To the Cube people, the iNkandla forest represents their social and economic base. It has been noted that in other parts of KwaZulu-Natal as well as South Africa, forest conservation by means of restricted use often creates social problems and increases the vicious circle of reduction of the resource base. It has been noted that when drastic and rapid changes happen, the ability of the local community to adjust their entrenched behaviours quickly is not sufficient to cope with the modifications needed in the way in which they utilise forest resources. The following is a diagram which illustrates how local people's capacity can be built to adjust to changes that can help sustain forest use for the future. Adapted from *Sustainable forestry*, Hagmann et.al., p.24)¹⁶⁹

¹⁶⁸ Livelihood is a word used to describe the specific social, economic and cultural system with which social groups organise their lives and livelihoods.

¹⁶⁹ Hagmann, T. Amend, S. Amend, *Sustainable Forestry*, 'Forest and nature conservation and development: Putting people first', Agriculture and rural development, 2000, p. 24.

Diagram 2: Recommended approaches



1. Creating social, economic & political bases
2. Strengthening institutions that exist in the area
3. Supporting private service providers
4. Creating environmental and educational awareness
5. Developing/Improving infrastructure (water, roads, sanitation)

This diagram shows the different approaches that can be adapted for the iNkandla forest situation. It also advocates putting people first by not only preparing them for the challenges the future holds, but also encourages people to take full responsibility for their own forest resources for their own benefit.

The five approaches illustrated in Diagram 2¹⁷⁰ are a learning process that can be introduced as a challenge to *Ezemvelo* KZN Wildlife to putting local people first while protecting forest resources. Local people should be recognised as part of the system in forest conservation if it is to be successful. How can these approaches be adapted and implemented to the iNkandla situation for the benefit of the Cube people? It has been investigated and explored in the previous chapters how human activities have impacted on forest resources over time. It is clear that a sustainable form of approach is required if we are to save forest resources for the future. The kind of approach that can be useful for forest conservation is the one that takes into consideration the enhancement of local people's capacity to benefit from environmental education and awareness in order to protect their natural environment actively and meaningfully.

The following is a brief elaboration of what the five suggested approaches stand for and how each of these could be adapted and implemented to the iNkandla situation. Not all will suit the iNkandla situation but a selected few that fit the situation will be tested.

5.3.1. Participatory innovative development

This involves a joint effort between the local people and support services, for example, the Cube people and *Ezemvelo*, KZN Wildlife (Eshowe) to develop and disseminate social and economic innovations. These innovations could set new social rules, and could be designed and implemented for dealing with specific forest resource problems. In the iNkandla case those problems could be overexploitation and over utilisation of forest resources.¹⁷¹

5.3.2. Dealing with conflicts

This approach involves methods of dealing with conflicts between *Ezemvelo* KZN Wildlife and the local community. The approach that can be followed and used effectively is negotiating and analysing interests among the interested and affected parties.¹⁷²

¹⁷⁰ Ibid., pp. 16-37.

¹⁷¹ Ibid.

¹⁷² Ibid.

5.3.3. Resource use planning

This approach aims to develop and establish agreements and rules that will be agreed upon by, not imposed on, people for the sustainable utilisation of resources in the areas surrounding forest conservation areas. If such an agreement is reached between the local community and *Ezemvelo* KZN Wildlife, it is unlikely that problems of over utilisation and or over exploitation would continue to be experienced. If local people are actively involved in forest management and are responsible for issues of this nature, their ability to participate meaningfully will grow. As a consequence, fewer forest problems can be expected.¹⁷³

5.3.4. Village-level organisational development

This is where the accountability of local traditional leaders and community development structures is crucial. This approach could strengthen the representation of village communities within the nature conservation authority. The village-level development approach, if applied properly, could serve to clarify responsibilities and roles within the community so that agreements and rules can be established and implemented meaningfully.

5.3.5. Resource conservation extension

This approach is aimed at raising environmental awareness and increasing the commitment to solving of ecological problems and impacts of human activities and practices on forest resources. We need to develop knowledge and skills that local people will share amongst themselves. Resource conservation education campaigns should be established and implemented. When local people are equipped with knowledge and skills their participation in forest resource management will be enhanced.¹⁷⁴

These proposals will not be able to be implemented effectively without instituting complementary measures such as infrastructural development, building institutions amongst local people, changing the political and legal framework, enhancing environmental awareness and capacity, and supporting nature conservation service providers.

The iNkandla forest is an indigenous forest that is jeopardised by over-utilisation and over exploitation by the people of the local community who harvest forest resources for their own material needs. However, to adopt these suggested approaches for the iNkandla forest situation, it will be essential to work with the local community, local traditional leaders, social development structures that exist in the area and the nature conservation authority, *Ezemvelo*

¹⁷³ Ibid

¹⁷⁴ Ibid.

KZN Wildlife to promote the development of innovations for forest resource conservation. There will be a need for social and technical innovations as long term harvesting of forest resources requires mutual agreement between local people and the conservation authority concerning forest access rights. For this to be successful forest resource conservation advice system is needed. Nevertheless, joint forest use planning will entail conflicts because access rights will be restricted and thus will run counter to various vested interests. In such cases, conflict management methods are required. For example, the Cube people lay claim to the iNkandla forest resources hence the term 'the people and their forest'. This is where the agreements and rules need to be negotiated with the nature conservation authority responsible for that area, which of course has its own interests. Such negotiations will need a strong legitimate village-level organisation that is capable of representing the interests of all local people in the area and not just the local leaders.

5.4 COMMUNICATION

Effective communication is much more than sending out information or written material. It is how to manage information, how effectively this information is provided to people and how this information helps empower people in terms of acquiring a sense of understanding, ownership and goodwill that depends on sustainable utilisation of the iNkandla forest resources. Effective communication channels should be established and streamlined to avoid conflicting information from different or same sources. This is not to say people should think alike but different views need to be acknowledged and discussed. People must be encouraged to contribute their thoughts and ideas. An effective communication strategy involves teamwork.

5.5 CONCLUSION

Recommendations that have been drawn up emphasize the need for conservation authorities and staff to learn from experience and to integrate scientific research with local traditional knowledge, and with social values. People's diversity should be recognised. Dialogue, co-operation, co-ordination and ultimate integration must be promoted to foster a shared responsibility amongst all stakeholders for the sustainable use of resources.

Strengthening and enhancing the capacity of local people in forest resource conservation will only be attained by an approach that is flexible, easy to follow, constructive and tailored to the situation at hand. In this case it involves the Cube people in the iNkandla area and their forest. Where can the Cube people start if they are keen to rectify their behaviour and activities with regard to forest resources for the future? First of all they will have to organise themselves, elect a facilitator, analyse the problems they are faced with, initiate negotiations and propose a forest development project on the sustainable use and conservation of forest resources.

CHAPTER SIX

CONCLUSION

REVISITING THE THEORY OF ENVIRONMENTAL HISTORY

6.1 INTRODUCTION

The purpose of the guidelines and methodology adopted and applied to the study was to promote an understanding of how the present iNkandla landscape and the patterns of the Cube people's activities have impacted both negatively and positively on their relationship with the natural resources of the forest. Through the implementation of these guidelines the interrelationship of the Cube people with the resources of the forest was made explicit. The concept of the 'mode of resource use' Gadgil and Guha advocated in their study of India has provided guidelines in an exploration of the ecological change of the Cube people's mode of resource use politically, economically and socially. It has also assisted the researcher in directing the focus of this study with a special attention to the relationship between the Cube people and the forest from the early colonial period to the present. The patterns of agricultural and cultural activities of the Cube people namely: livestock production, crop cultivation and hunting were significant modes of resources use. This study has attempted to understand the role of the forest and its resources in influencing the lives of the Cube people.

6.2 WHY ENVIRONMENTAL HISTORY?

'The people and their forest' is about an environmental crisis that is perceived to be emerging due to high dependency and reliance the people have on forest resources for meeting their daily material needs. Since this dissertation is about the mutual interaction between people and natural resources, the environmental history approach was an ideal one for the study. This approach has assisted the researcher to explore the ecological changes to people and their forest resources over time. A chronological sequence of events that took place and impacted on the forest environment was described to promote understanding and awareness of the present landscape, how it has come to be what it is today.

6.3 WORSTER AND DOVER'S THEORY

The two environmental history theorists have both advanced the idea that environmental history combines subjects from both the natural sciences and humanities. Apart from using this theory as a guide to the study, it has been observed that this study has achieved its purpose to promote an understanding of the role of the forest and the longstanding relationship that the people and the forest have. In Chapter Two the significance of the theory is highlighted as it explores the pristine and scenic beauty of the forest and its ecology before human impact. Chapter Three explores and investigates the history of the people and their daily activities. Chapter Four illustrates the argument that human activities have environmental consequences and that change

in natural systems, whether induced by either humans or nature itself, affect human beings as well as the environment. The socio-economic realm as it interacts with the environment is highlighted.

The interaction between the forest and the Cube people is relevant and symbolic of the discipline of environmental history adopted by this study. The study as a whole argues a case that environmental cultures and economies of people interact in order to influence and shape one another. The mutual interaction between people and nature over time is investigated and explored in Chapter Four in keeping with the title 'The relationship between the people and their forest'.

The study has explored the role of environmental change as well as the people's change in lifestyle over time. Throughout the study it is evident that the theory adopted to provide guidelines and a methodology is suitable. The study investigated the human impacts and relationship with the natural world. It has achieved its purpose through the adoption of the recommendations of Worster and Dovers, establishing baselines by answering the questions of what was there before and what is there now. The chapter that deals with the iNkandla forest and its ecology and the history of the Cube people all explores this question. This knowledge has made it possible for the author to appreciate the value of the forest and the cultural background of the people.

6.4 GADGIL AND GUHA'S THEORY

Gadgil and Guha's concept of the mode of resource use has assisted the researcher in paving the way to explore and chart the changes in the mode of resource use by the Cube people over time. The main modes of resource use identified by this research in the Cube area were mixed farming involving crop cultivation associated with 'settled cultivation', and livestock (pastoralism) with a hunter-gathering component (gathering mode), which research focused on the iNkandla forest and its surrounding pocket forests. These are the modes of resource use that the Cube people of iNkandla employed, as shaped by the impact of the industrial mode, through migrant labour and commerce. The study has investigated how these modes shaped the Cube interaction with the natural environment for hundreds of years until the 1880s, when the industrial mode of resource use in the form of migrant labour and commerce began to intrude into the iNkandla area. As the traditional resource base deteriorated through the impact of colonial interaction and rule, so migrant labour and attendant changes became increasingly important in the Cube economy although important elements of traditional modes of resource use have survived to the present. Through colonial rule the Cube people were persuaded and encouraged to seek labour in urban areas so that they could earn money for subsistence, and in particular, for the payment of government taxes.

The study adopted the theories of Worster, Dovers, Gadgil and Guha to look towards establishing sustainable interrelationship between the people (humanities) and the forest (natural sciences). The study is based on three concepts: the construction of history, the establishment of baselines, and the identification of long-term trends.

Gadgil and Guha have argued that within one society, more than one form of resource use may occur, but there will always be one dominant mode. In the case of the iNkandla study area the current dominant mode of resource use is money. The study found how the people prevalently rely on pensioners for subsistence, as there is high rate of unemployment. The use of Gadgil and Guha's mode of resource use as a guide in this dissertation has offered a more pragmatic and realistic view of the iNkandla study area, than e.g. there is more employment in the cities than in the country.

In conclusion, this study has offered its readers insight and understanding of the mutual interaction that exists between human beings and nature. It is this insight that will empower people with knowledge to understanding that human culture and people's ideologies around the world have everything to do with the status of the environment and what changes are occurring within the environment. Empowered people will recognise social principles for adopting appropriate interactions with nature. For example, the principle that everything be it animals or plants, has rights which should be preserved and protected will be recognised. The acquired knowledge and understanding will enable people to make effective choices and decisions about how to utilise, harvest and manage the forest resources in a sustainable manner.

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